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COMMERCIAL FISHERIES REVIEW

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ALBERT M. DAY, Director

COMMERCIAL FISHERIES REVIEW

A REVIEW OF DEVELOPMENTS AND NEWS OF THE FISHERY INDUSTRIES
PREPARED IN THE BRANCH OF COMMERCIAL FISHERIES

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CONTENTS

COVER: THE FISHERMEN ARE SLITTING AND GUTTING FISH JUST HAULED ABOARD A LARGE NEW ENGLAND TRAWLER FISHING ON GEORGES BANK. THE NET HAS BEEN SET FOR ANOTHER HAUL. THE OTTER TRAWL IS THE PRINCIPAL GEAR USED BY NEW ENGLAND VESSELS FISHING IN THE NORTHWEST ATLANTIC.

	PAGE
UNITED STATES POLICY WITH REGARD TO HIGH SEAS FISHERIES, BY W. M. CHAPMAN	1
CHICAGO RECEIPTS OF FISHERY PRODUCTS, 1947, BY C. M. REARDON	10
* * * * * * * *	
RESEARCH IN SERVICE LABORATORIES	17
TRENDS AND DEVELOPMENTS	20
ADDITIONAL INCREASE IN FREIGHT RATES REQUESTED	20
ADDITIONS TO THE FLEET OF U. S. FISHING VESSELS	20
AGRICULTURAL (INCLUDING FISHERIES) PROBLEMS IN LATIN AMERICA	21
ALBATROSS III FINDS GROUNDFISH OFF DAVIS BANK	22
ALBATROSS III COMPLETES FISH CENSUS	22
CALIFORNIA STUDIES PACIFIC TUNA FISHERY	23
DEPUTY ADMINISTRATOR NAMED FOR PHILIPPINE FISHERY PROGRAM	24
EXPLORATORY OPERATIONS OF WASHINGTON	24
ECA PROCUREMENT AUTHORIZATIONS FOR FISHERY PRODUCTS	24
FEDERAL PURCHASES OF FISHERY PRODUCTS	25
FOOD SITUATION IN EUROPE	25
INCREASED ICE CHARGES BY RAILWAY EXPRESS SUSPENDED	26
PERSONNEL CHANGES (BRANCH OF COMMERCIAL FISHERIES)	26
PROPOSED INDO-PACIFIC FISHERIES COUNCIL	27
WASHINGTON STATE LANDINGS, 1947	27
WHOLESALE AND RETAIL PRICES	28
FOREIGN	29
AUSTRALIA	29
ARGENTINE REPUBLIC	31
BIZONE GERMANY	36
BRITISH HONDURAS	37
CANADA	38
DENMARK	38
ECUADOR	38
FRANCE	40
GREECE	40
ICELAND	41
KOREA	41
MEXICO	42
NEWFOUNDLAND	43
NORWAY	48
REPUBLIC OF PANAMA	54
POLAND	54
REPUBLIC OF THE PHILIPPINES	55
SIAM	56
SPAIN	56
VENEZUELA	60
INTERNATIONAL	60
FEDERAL ACTIONS	63
FOOD AND DRUG ADMINISTRATION:	
PERUVIAN CANNED BONITO AND TUNA	63
DEPARTMENT OF STATE:	
ANNOUNCEMENT OF INTENTION TO ENTER INTO TARIFF NEGOTIATIONS, APRIL 1949	63
NORTHWEST ATLANTIC FISHERIES CONFERENCE	65
U. S. AND MEXICAN FISHERIES CONFERENCE	74
GRAPHS	78
LANDINGS AND RECEIPTS	78
COLD STORAGE HOLDINGS AND FREEZINGS OF FISHERY PRODUCTS	79
CANNED FISHERY PRODUCTS	80
PRICES, IMPORTS AND BYPRODUCTS	81
RECENT FISHERY PUBLICATIONS	82

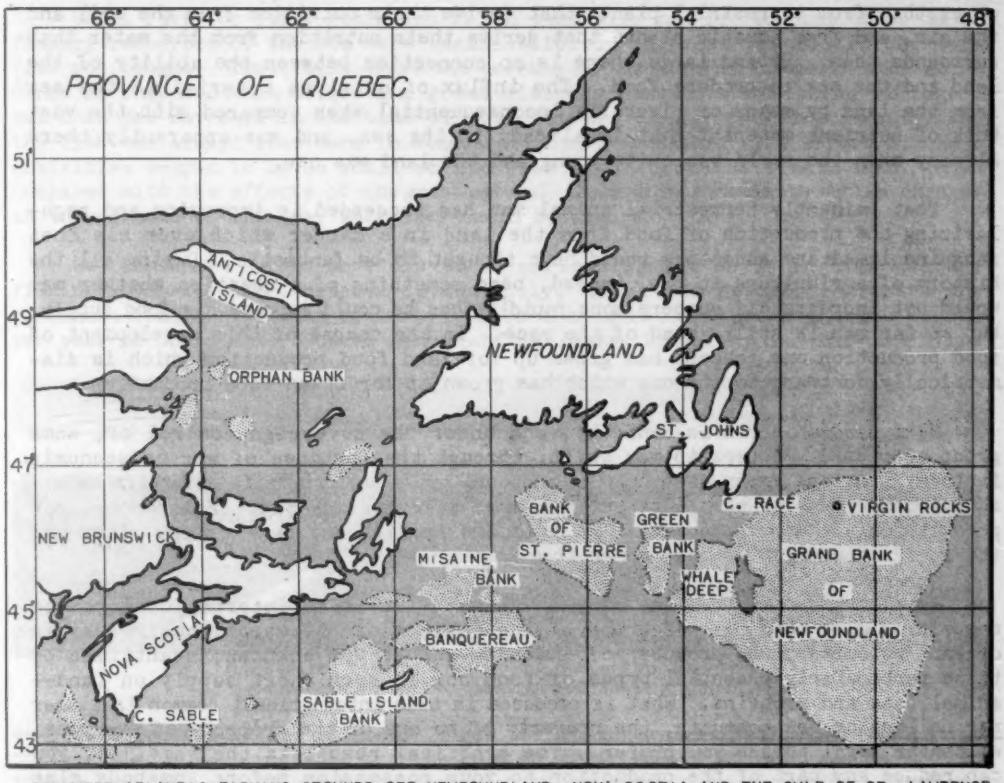
COMMERCIAL FISHERIES REVIEW

DECEMBER 1948 Washington 25, D.C. Vol. 10, No. 12

UNITED STATES POLICY WITH REGARD TO HIGH SEAS FISHERIES[1]

By W. M. Chapman*

Your Chairman has asked me to speak on the subject of the policy which our Federal Government has toward high seas fisheries. This policy, briefly put, is



NORTHWEST ATLANTIC FISHING GROUNDS OFF NEWFOUNDLAND, NOVA SCOTIA AND THE GULF OF ST. LAWRENCE WHICH ARE FISHED BY UNITED STATES, NEWFOUNDLAND, CANADA, AND EUROPEAN MARITIME NATIONS.

to make possible the maximum production of food from the sea on a sustained basis year after year.

So stated, this policy is extremely simple, and I doubt that any man in the world will find objection to it. In a hungry world the production of food from any

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1/ An address delivered before the National Resources Section Meeting of the State-wide Annual Meeting of the California State Chamber of Commerce at San Francisco on December 2, 1948.

Note: See article "Northwest Atlantic Fisheries Conference" for a draft of the International Convention for the Northwest Atlantic Fisheries, p. 65 of this issue.

source, and the maintenance of any source of food production, is looked forward to avidly by everyone. Yet the implementation of this simple policy is fraught with as much complexity as any policy that the United States Government has before it. The roots of the difficulties go back into history to our colonial period and even further. The difficulties are being rapidly accentuated by the vast advances in marine technology that the recent war stimulated.

All food on this planet comes from one source. Plants put together the energy of the sun with the chemicals that surround them and the result is new chemicals which animals can eat and from which they can derive energy. These chemicals are collectively called food.

The production of these plant foods comes from two independent kinds of area on earth: from terrestrial plants that derive their nutrition from the soil and the air, and from aquatic plants that derive their nutrition from the water that surrounds them. By and large there is no connection between the ability of the land and the sea to produce food. The influx of nutrient material to the sea from the land by means of rivers is inconsequential when compared with the vast bulk of nutrient material that is already in the sea, and was apparently there already when the world was quite young and the land was new.

That eminently terrestrial animal man has succeeded in improving and regularizing the production of food from the land in a manner which even his most sanguine immediate ancestors would have thought to be fantastic. During all the history of agriculture it has, indeed, been something of a question whether man would not increase his numbers more rapidly than he could improve his food supply, but so far man is still ahead of the race. In the course of this development of food production one concept has grown up for land food production which is diametrically contrary to the one which has grown up for ocean food production.

Most land on earth is owned by, and under the sovereign control of, some group of people. Ownership may shift, through the fortunes of war or economic factors, from one group of people to another, but always there is sovereign ownership. Some group of people can at any time say, for any spot of land that can produce food, that the food will be produced in such and such a way. They own the land and everything that comes from it.

In direct contrast no one owns the ocean. It is an international common comprising more than three-fourths of the surface of the earth; the reservoir of vast resources; the producer of immense, and as yet unknown, quantities of those particularly essential types of food now in such short supply on land—animal fats and proteins. What is produced in this international common is either res nullius or res communis, the property of no one or the property of everyone, whichever legal phrase you prefer. The practical result is the same. If you can reduce any part of the production to your possession before somebody else does then it is yours—but not until then.

The consequence of this lack of ownership is that there is no law to cover the means of production from these food resources. They cannot be placed under any solid type of management either for good or for bad. Fish are owned property when they are reduced to possession; fishery resources of the open sea are owned by everyone or no one. They are the sovereign property of no nation.

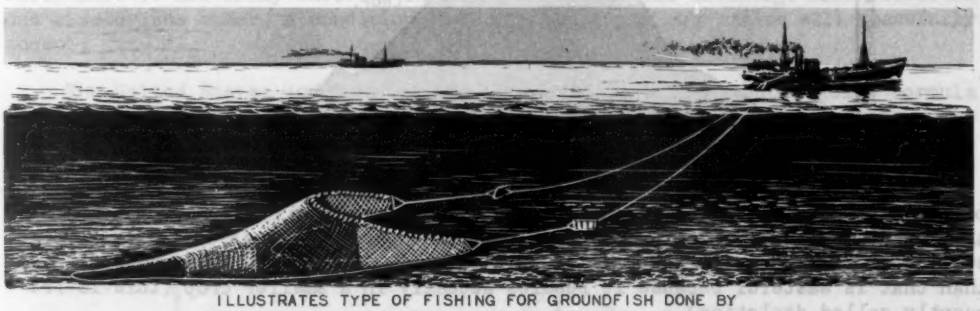
Between the land and the open sea is a narrow belt of water which in many parts of the world is very productive, and which is called territorial waters.

By international accord this is taken to be under the sovereignty of the nation whose coasts it washes, and its products are the property of that nation. The narrowness of this band of water is assured because naval policy and commercial policy, and ordinarily the fishery policy, of the major maritime nations demand that the seas be open to unimpeded navigation.

Most of the major fisheries of the world started in these narrow territorial waters. As market demands increased, however, fishermen increased the size and navigability of their vessels, and the efficiency of their methods, and went far beyond territorial waters for their catches. For the past two hundred years most of the major fisheries of the world have lain at least partially outside territorial waters.

Until forty or fifty years ago it was generally considered that these major fishery resources of the sea were inexhaustible. The more you fished the more fish you caught. True, some years the herring or cod were not there in such abundance as they had been before and great distress came to the fishing villages. But this had happened in the time of your father, or his father's father, and the fish had always come back in abundance sooner or later. The effect of man's activities seemed to be so small on the fish populations he fished upon, when compared with the effects of the great natural fluctuations caused by cyclic changes in the climate of the sea, that they could be ignored.

But fishermen became more clever at harvesting the sea. In this century fishing intensity has increased tremendously. Motors in vessels increased the distances that a fisherman could travel to the banks, and the numbers of trips per year he could make between market and the banks. Diesel engines made the trips



ILLUSTRATES TYPE OF FISHING FOR GROUNDFISH DONE BY TRAWLERS FISHING ON THE BANKS OF THE NORTH ATLANTIC.

even more dependable and cheaper. First ice and then mechanical refrigeration on the vessels made it possible for him to stay longer on the grounds, and go farther to new grounds, and return with larger catches in first class condition. Gear was improved to catch more fish in less time. In only the last few years new developments have improved fishing efficiency tremendously. New instruments from the war permit the fisherman to follow the schools in the depths and to set his nets where the fish are without having sighted a fish. Other instruments have made the most complex navigation easy to the simplest fisherman. Radar permits him to operate in the heaviest fog--that bane of all seamen.

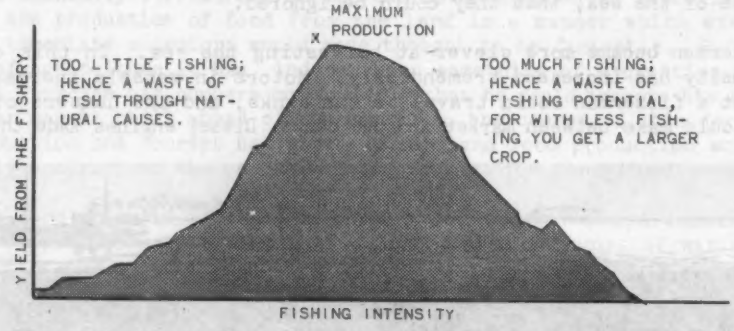
With this tremendous increase in fishing effort, which is still increasing at a rapid rate, there came a new factor into the sea fisheries. Some kinds of fish became less abundant. This had been happening for time without memory and fishermen said, "Wait, they will be back again."

But some kinds of fish just did not come back. A new branch of science had built up, fishery biology, and biologists now claimed that some fish would never come back unless the fishery was relaxed. Too great a crop had been taken. The population of fish would not produce so many and still be able to maintain its abundance. In order to get big crops of food again from this population of fish you would have to take smaller crops until the population recovered in size; you had to build up your capital stock if you were to increase your revenue from it.

Evidence has continued to mount in recent years that the following is true: when you begin fishing on any population of fish, that population begins to decrease in total numbers as the take of fish from it increases. Up to a certain point, however, the reproductive capacity of the population increases also—whether because there is more food for what fish are left, or less loss to natural predators, or whatever cause, is not well understood yet.

If the fishing intensity continues to increase, however, you at last come to a point where the population of fish cannot respond and now the yield begins to drop off no matter how hard you fish or how many vessels you use, or how efficiently you work.

The matter is easily expressed in a simple curve:


MAXIMUM PRODUCTION
TOO LITTLE FISHING; HENCE A WASTE OF FISH THROUGH NATURAL CAUSES.
TOO MUCH FISHING; HENCE A WASTE OF FISHING POTENTIAL, FOR WITH LESS FISHING YOU GET A LARGER CROP.
YIELD FROM THE FISHERY
FISHING INTENSITY

The sense of this is that for any particular population of fish there is a point of fishing intensity which will yield a maximum crop of fish from that population year after year into eternity. Less fishing than that is wasteful, for the surplus of fish dies from natural cause without benefit to mankind; more fishing than that is wasteful because it results actually in a smaller crop (this is frequently called depletion).

The determination of this point of optimum fishing intensity is a difficult and expensive task. Please remember also that the abundance of the population of fish is still fluctuating due to natural causes beyond the control of man, and consequently this point of maximum production changes as the cyclic changes in the climate of the sea affect the productive ability of the particular fish population. In such important kinds of fish as herring and sardine it becomes apparent that these natural fluctuations are of major importance; in such fish as halibut it seems that natural fluctuations are small enough that they can almost be ignored.

It is not my purpose to go into the difficulties of the scientific work at this time, but to dwell on the diplomatic difficulty that follows as a result of this new concept: that less fishing can in some cases provide more fish, and

the apparent fact that, as the technology of catching improves, one after another of the major fishery resources of the sea stands in danger of overfishing and depletion.

These factors indicate that management of each fishery will be desirable when the fishing intensity gets beyond the point of maximum return. But who is to manage the fishery on the high seas? Management means laws, and the enforcement of those laws. The high seas are an international common. It would probably be argued that the United States under accepted international procedure has no right to regulate the fishermen of another nation unless that nation has given us permission to do so.

There is one way out of this puzzle. It is not generally known to fishermen, but is well known to all foreign chancellories over the world. A fisherman once he goes beyond the limits of territorial waters of his country is no longer exercising rights which belong to him as an individual. He is exercising rights belonging to his country under international law. Consequently each country has control over its own fishermen wherever they go on the high seas and can, either through the central government or the power of its political subdivisions, control fully the activities of these fishermen.

Thus any nation has all the powers it needs to regulate and manage any fishery in which its own nationals only participate.

The difficulty is that most kinds of fish are migratory and fishermen follow the fish without regard to nationality. Where the nationals of more than one nation fish together on the same grounds all must work under the same regulations which must be uniformly enforced on all, or a commercial advantage will accrue to one side or the other, a condition that no fisherman of any nation will peacefully accept.

The United States and Canada have succeeded in working out a joint formula for managing the high seas fisheries in which only their nationals operate. Beginning first with the halibut fishery of the North Pacific, the two nations set up a Joint Commission under treaty. The first duty of this Commission was to determine whether regulation of the halibut fishery was necessary and desirable.

TYPE OF ENGLISH TRAWLER FISHING IN THE NORTH ATLANTIC.

Through the determination of scientific information the Commission found that regulation was desirable. Successive changes in the treaty have given the Commission more and more power of regulation over this fishery. The regulations have proved to be tremendously beneficial to the fishermen of both countries, and consequently to both countries.

It is to be noted that regulations of the Commission are designed solely to keep the populations of halibut in the Northwest Pacific at that level of abundance which makes possible the maximum sustained yield from those populations year after year. The percentage of this catch which goes to either country depends solely on the energy and ability of its fishermen. Within the season fishermen of both countries fish everywhere under equal privilege; when the season closes all fishermen stop.

When the Commission began managing the halibut fishery the fishermen of both countries together, fishing nine months of the year (all the weather would permit) could take about 35 million pounds of halibut from the North Pacific. The populations of halibut on the banks have been so carefully managed and built up that now those fishermen take 55 million pounds each year in less than two months of fishing.

The object lesson of this cooperative effort has been so striking that it has had world wide significance. Canada and ourselves have been joint partners in another similar Commission for the past several years, the International Pacific Salmon Commission, which has as its duty the management of the sockeye salmon fishery of the Fraser River. This Commission is also producing results which are highly beneficial to both countries and, in that its work results in a greater production of food, to mankind generally. A third fishery treaty has been signed between our two countries to manage the fisheries of the Great Lakes. This has still to be ratified by our Senate before coming into effect.

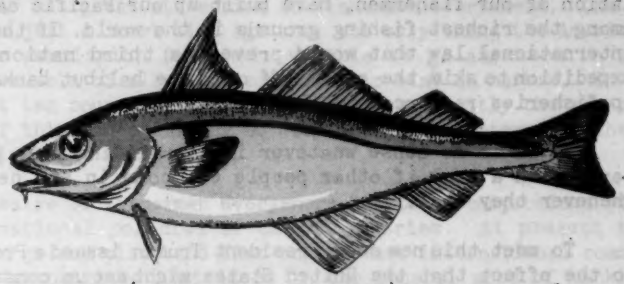
A major benefit of these various treaties has been that the two countries have become used to working together on fisheries problems. What used to be serious political problems between us have one after the other come under the impartial eye of our fishery scientists working jointly, and one after another they have simply evaporated before the pressure of scientific fact. In fact we work together so closely on fisheries matters now, especially on the Pacific Coast, that much passes between our fishery administrators and scientists which never comes to the attention of treaty makers or ambassadors. I am sure that this lack of trouble in fisheries is as happily received by the Canadian Department of External Affairs as by our Department of State.

We have recently completed an agreement with Mexico to set up a Commission for the purpose of investigating the tuna resources occurring off the coasts of both countries. This is very similar to the Halibut Commission. With this treaty we hope not only to begin gathering information which will be useful in managing the great tuna fishery, when that proves to be necessary, but also to build up amity on fishery problems by joint work on joint problems to the end that one day we will have permanent mutually amicable relationships in fisheries matters with both our neighbors to the south and to the north.

These bilateral treaties represent the simplest form of management of fisheries in international waters. The work of even these bilateral Commissions has been much more difficult than has appeared on the surface. Long years of gathering scientific facts have had to precede each positive step by both of our working Commissions.

Arguments and high temperatures in meetings have occurred; a high degree of statesmanship has been necessary on the part of both Commissioners and industry leaders; a high degree of scientific competence has been required on the part of the Commission staffs. That these treaties have worked at all is a high tribute to the good will, energy, and level-headedness of the men involved.

We are now embarking on a task which is many-fold more difficult than anything that has been attempted to date in managing fisheries in international waters. It has become apparent that the halibut, haddock, and cod resources of the Northwest Atlantic either require regulation now or will in the immediate future. Canada and ourselves are both involved in these fisheries. We would have no trouble in signing a joint treaty to handle these fisheries, as we have others of our joint fisheries, if only Canada and ourselves were alone involved.



HADDOCK (MELANOGRAMMUS AEGLEFINUS) IS NEW ENGLAND'S MOST VALUABLE FISHERY RESOURCE, AND ONE OF THE NORTH ATLANTIC'S MOST VALUABLE. U. S. PRODUCTION OF HADDOCK, IN RECENT YEARS, HAS DECLINED CONSIDERABLY.

But here fishermen of other nations are involved. There is good evidence that Basque fishermen were fishing cod on the Grand Banks when Leif Ericsson, the Norseman, sailed by on his way to Vinland, long before Columbus set sail to the west or before there was a Canada or a United States. Spanish, Portuguese, French, Italian, English, Danish, and Norwegian fishermen work on these stocks of fish, as well as fishermen from Canada, Newfoundland, and the United States. That these nations have rights to fish in the waters of the Northwest Atlantic goes without question. That it is impossible to regulate one kind of fisherman on a bank and not another kind who is fishing along side him, is also unquestioned.

This Government is calling together, in late January, a conference of these and other nations in the expectation of reaching a multilateral agreement establishing a Commission which will have the same beneficial effect in the Northwest Atlantic as we have seen in the Pacific.

The aim of these unilateral, bilateral and multilateral arrangements for managing fisheries in international waters is without question beneficial to all of mankind in that they seek to increase and protect the amount of food that can be produced from the sea. Their work lies wholly within the presently accepted tenets of international law. So long as all nations whose fishermen are involved sign the treaty, all fishermen involved are covered by the regulations of the Joint Commission.

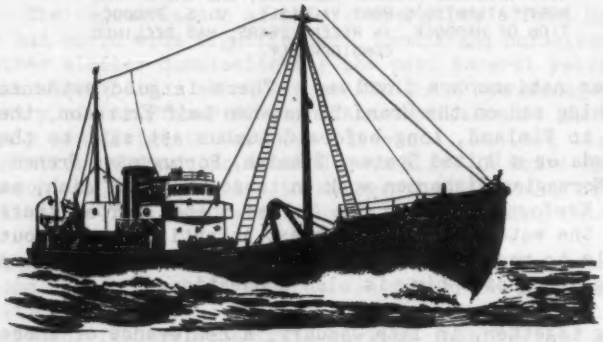
The difficulty is that these types of agreements stand in danger of being outmoded by technological advances in fishing practice before they can be fully put into force. The mothership has come into the picture. A large ship and a group of smaller fishing vessels go out as a group. The large ship acts as a supply and repair vessel for the small vessels. The small vessels catch the fish and transfer the catches to the big ship for processing or refrigeration. The group of vessels can go to the ends of the earth after its catch and never come into the territorial waters of another country.

In this way European whalers catch and process whales in the Antarctic. Japanese mothership operations have worked in Bristol Bay. English motherships have operated in the Greenland halibut fishery, and so on. Fishermen from any country have the method, when they get the capital and working experience, to operate off the shore of any other country. This is a revolution in fishing technique and it will require a modification in international legislation to meet the new condition.

Canada and the United States by mutual sacrifice, expense, and strict regulation of our fishermen, have built up our Pacific halibut banks so that they are among the richest fishing grounds in the world. If there is nothing under accepted international law that would prevent a third nation from sending a mothership expedition to skim the cream off of these halibut banks, what is the use of building up fisheries resources in this manner?

There is no sense whatever in sacrificing your present pleasure to build up savings in a bank if other people can come in and help themselves to your money whenever they want.

To meet this new need President Truman issued a Proclamation in September 1945, to the effect that the United States might set up conservation zones to protect its coastal fisheries without regard to the limitations of territorial waters. Where only its own nationals are involved the United States would undertake exclusive jurisdiction over the fishery. The United States would recognize similar action by other countries in fisheries off their own coasts.



MODERN NEW ENGLAND TRAWLER WHICH PRODUCES THE BULK OF NEW ENGLAND'S CATCH OF GROUNDFISH ON THE BANKS OF THE NORTH ATLANTIC.

Note carefully that there was no mention in this proclamation of extension of sovereignty beyond territorial waters, nor of exclusion of fishermen of any nationality from any fishery.

The purpose of the proclamation was to provide for new means, under law, to protect fishery resources lying in international waters from over-exploitation.

Now one nation by itself cannot change law. A proclamation by the United States does not bind other nations to accept the new principle into the body of international law. There have already, for instance, been issued by several other nations proclamations covering their coastal waters which extend very considerably the scope of the Truman Proclamation.

Although they differ considerably, the general tendency of these other proclamations is to extend the territorial waters of the country involved--its sovereignty--a considerable distance beyond generally recognized limits, in some cases, indeed, up to 200 marine miles. All the production of the sea in this new territory might be regarded as the property of the country. Foreign fishermen in the area might be looked upon as illegal operators and treated accordingly.

This thesis would lead logically to the division of the oceans of the world into segments of sovereign property in the same way that the land surface of the world is so divided. This would be a step backward into the past to the time when Spain, Portugal, England, and other nations claimed vast areas of the ocean seas. The principle of sovereign ownership of the seas did not work then and will not work now. It works against too many maritime interests of too many maritime nations and is simply unacceptable to them.

Yet half of this thesis has great attraction to fishermen everywhere. One of our industry men told me in jest a short time ago that the only thing the American fishing industry wanted was permission for their vessels to go anywhere in the world and for the fishing vessels of all other countries to stay in harbor. To my knowledge there are at least ten countries who would like to see exactly the reverse of this--for the vessels of this man's company to stay out of the waters off their coast, and for their vessels to go everywhere.

This normal selfish desire of fishermen everywhere has to be compromised with the realities of the international policies of their countries. At present the nationals of any nation can go any place and fish on the vast international common of the sea. It cannot be demonstrated that it is in the general good of mankind to restrict, for selfish national purpose, the fishing activity of any particular nation in any particular segment of this common.

It can be demonstrated that it is in the general welfare of all mankind to protect the resources of the sea from overfishing to the end that the sea will continue to produce the maximum quantity of food that it can.

This is precisely the goal at which we aim. The aim is to provide a mechanism which will provide for each high seas fishery in the world the possibility of management, to the end that the population of fish upon which the fishery works will be kept at that level at which a maximum crop can be harvested year after year, ad infinitum.

As to who will get what share of that crop the nations of the world could not possibly agree at this time.

This part of the problem must be left, for the present, to free enterprise and competition, based upon fair methods of operation. There is a crop to be taken in the international common. Each takes according to his ability. When the safe crop is taken, all stop the harvest.

CHICAGO RECEIPTS OF FISHERY PRODUCTS, 1947

By C. M. Reardon*

INTRODUCTION

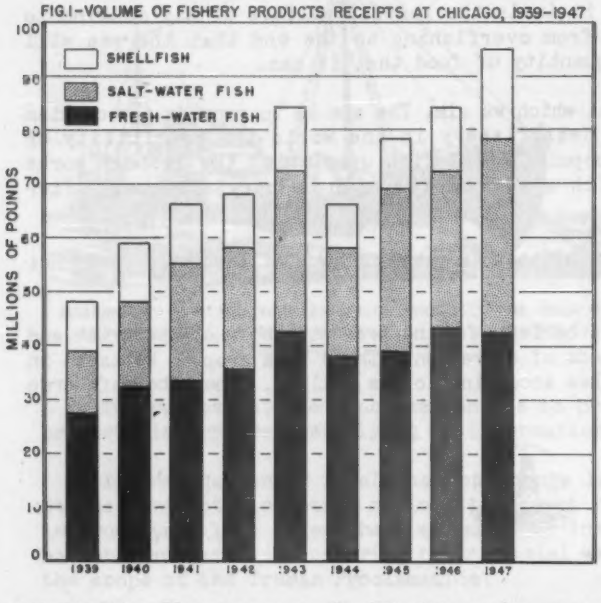
Receipts of fresh and frozen fishery products in the Chicago wholesale market during 1947 totaled 94,650,000 pounds. This was the greatest volume reported since the establishment of the Chicago Market News Office in 1938, surpassing the previous peak totals in 1943 and 1946 by over 10,000,000 pounds (Figure 1).

Receipts for 1947 exceeded those in 1946 by 12 percent. The gain was in the salt-water and shellfish arrivals. Salt-water varieties exceeded those for 1946 by 22 percent, shellfish receipts were up 35 percent, but fresh-water arrivals declined 2 percent.

SOURCES OF RECEIPTS

British Columbia was the principal source of shipments, contributing 17 percent or 15,774,000 pounds of the total; however, 68 percent of this amount was caught by United States vessels and transported through Canada to the United States in bond. Massachusetts was in second place, shipping 12 percent or 11,608,000 pounds of the total--a gain of 57 percent over 1946. Wisconsin ranked third in importance with 10 percent, or 9,915,000 pounds of the total receipts--a gain of 5 percent over the preceding year. Other States contributing 5 percent or more each to the total receipts, in the order of their importance, were Michigan, Louisiana, and Minnesota. Besides British Columbia, other Canadian Provinces contributing important receipts were Manitoba, Nova Scotia, and Alberta.

FIG.1-VOLUME OF FISHERY PRODUCTS RECEIPTS AT CHICAGO, 1939-1947



Of the total receipts, those arriving from domestic sources, including Alaska fish shipped in bond through Canada, amounted to 78 percent or 73,768,000 pounds of the total, while imports accounted for 22 percent or 20,882,000 pounds.

RECEIPTS BY SPECIES

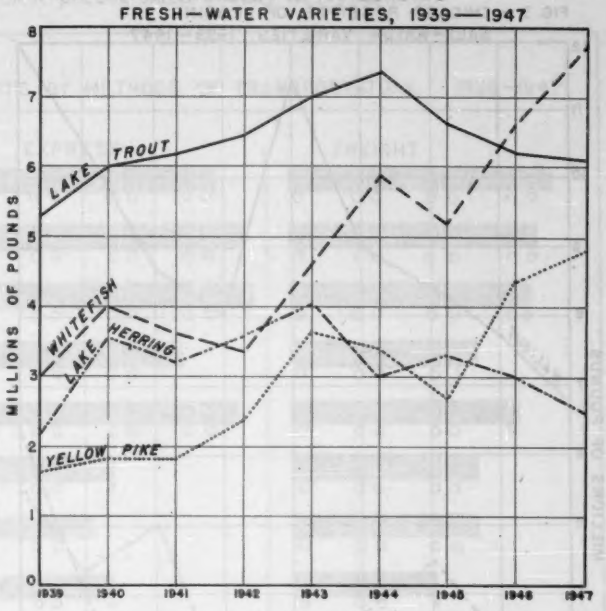
The number of fishery items received at Chicago, divided into classifications of fresh, frozen, filleted, steaks, etc., totaled 162. Of this total, 55 were

*Fishery Marketing Specialist, In Charge, Fishery Market News Service Office, Branch of Commercial Fisheries, Chicago, Ill.

fresh-water varieties, 79 were salt-water varieties, and 28 were shellfish and miscellaneous aquatic items.

Of the fresh-water varieties received, whitefish led with a total of 7,728,000 pounds, followed by lake trout with 6,118,000 pounds, and yellow pike with 4,791,000 pounds (Figure 2). These three species accounted for 37 percent of the fresh-water total of 41,652,000 pounds. Following these were carp, buffalofish, chubs, and yellow perch, all over 2,500,000 pounds each.

FIG. 2 — CHICAGO RECEIPTS OF LEADING FRESH—WATER VARIETIES, 1939—1947



Halibut led the salt-water items with 12,106,000 pounds (the greatest amount of halibut received since the establishment of the Chicago Market News Office), followed by frozen rosefish fillets with 6,275,000 pounds, salmon (all species) with 5,519,000 pounds, and cod with 4,591,000 pounds (Figure 3). These four varieties made up 79 percent of all salt-water arrivals.

Shrimp receipts accounted for 63 percent of the shellfish arrivals and totaled 10,728,000 pounds, the heaviest receipts since 1938 when the collection of market news data was begun. Second in importance among the shellfish arrivals was oysters with 2,453,000 pounds, followed by frozen spiny lobster tails, scallops, clams, lobsters, and squid.

METHODS OF TRANSPORTATION

During 1947, motor trucks transported 28,479,000 pounds, or 30 percent of the total receipts--65 percent above the 1946 total (Figure 4). Chief reasons for the return of the truck as a major factor in transportation of fishery products to Chicago are larger units, the increased use of cheaply-operated diesel power, and the ease with which shipments can be re-routed, adaptability of door-to-door deliveries, and the savings of time on short hauls.

Railway express moved 32,181,000 pounds or 34 percent of the total in 1947--a decline of 10 percent compared with 1946.

Rail freight handled 33,990,000 pounds, or 36 percent--a gain of 8 percent over 1946. The gain in rail freight shipments was due mainly to the growing importance of frozen fishery products on the Chicago market, which can be handled readily by the slower but cheaper rail freight.

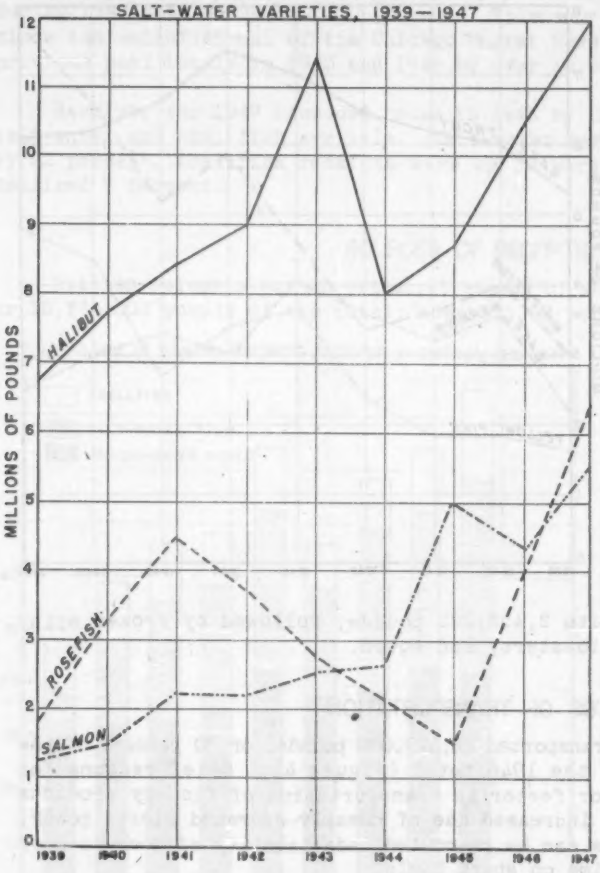
The bulk of the domestic receipts was handled by motor truck while the major portion of the imports was moved by rail freight. Some arrivals of fishery products were received by air express, but the total was relatively unimportant.

SEASONS

Receipts during 1947 were heaviest in October (the same as in 1946) followed by September, and November.

The greatest quantity of fresh-water varieties was delivered in October with April second in importance, and March third. Contributing to the October fresh-water arrivals were large deliveries of chubs, lake trout, lake herring, whitefish, yellow perch, and yellow pike.

FIG. 3 — CHICAGO RECEIPTS OF LEADING SALT-WATER VARIETIES, 1939—1947



Salt-water arrivals also reached their peak in October with July second and June third. The chief reason for the large salt-water deliveries during October was the late halibut season which delayed by two months the usual heavy halibut arrivals that generally reach their peak earlier. At the start of the 1947 Pacific Coast halibut season in May, a dispute arose between fishermen and vessel owners at Seattle that continued through May and June, and the landings of halibut at Seattle did not start until early in July. Although halibut arrivals in Chicago were heaviest in August, heavy receipts continued through September, October, and November.

September led all other months in arrivals of frozen rosefish fillets with 876,000 pounds, followed by July, August, and October.

Receipts of salmon (all species) reached a maximum in November when 829,000 pounds arrived, followed by October with 778,000 pounds, February with 746,000 pounds, March with 712,000 pounds, and April with 560,000 pounds.

Shrimp receipts reached their highest monthly total in September when 1,475,000 pounds were received, followed closely by May with 1,440,000 pounds, and October with 1,322,000 pounds.

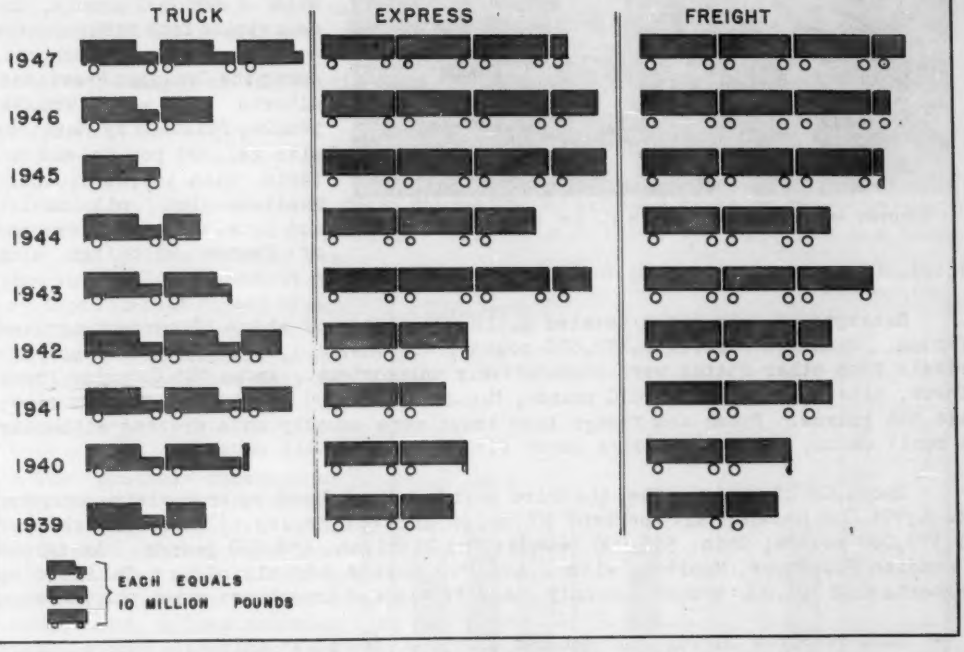
MARKET CONDITIONS AND PRICES

Market conditions throughout the year were erratic as the demand fluctuated from light to moderate, rarely becoming heavy. Supplies usually took care of the

demand but, at times, the demand dropped leaving dealers with large supplies of unsold fish.

Large cold-storage holdings of halibut during the four months leading up to the opening of the 1948 halibut season sent halibut prices down to levels below the 1947 ex-vessel prices on the Pacific. The expected lower prices for the 1948 halibut catch influenced the halibut market which steadily weakened with the approach of the 1948 season. Salmon prices held steady all year.

FIG. 4 — CHICAGO RECEIPTS BY METHODS OF TRANSPORTATION, 1939-1947



For the first time since the lifting of Office of Price Administration controls in 1946, shrimp prices, during the last months in 1947, showed declines. While they did not drop to the level under OPA, a marked decline began during the latter part of October and continued into 1948. The decline was due chiefly to large cold-storage holdings and a lighter demand.

Changing economic conditions also influenced the buying of other high-priced fishery products. Prices for nearly all fishery products underwent frequent changes throughout 1947. Prices fluctuated more frequently and drastically in 1947 than at any time in the past six years. The increased demand expected by local dealers during the Lenten season and the Hebrew holiday periods did not materialize. The buying, in general, on the Chicago Wholesale Fish Market in 1947 fell far below that of recent years.

LEADING VARIETIES AND MARKET FORMS

Whitefish, the most important fresh-water item on the Chicago wholesale market, totaled 7,728,000 pounds in 1947, of which 24 percent arrived frozen. The 1947 receipts were the greatest since 1938. Whitefish usually arrived on the market dressed although a small portion was received round at certain times of the year. Some quantities were filleted fresh, and there were a few arrivals of frozen fillets. Among the States shipping fresh whitefish, Wisconsin led with 2,620,000 pounds, Michigan was second with 1,488,000 pounds, and deliveries from other States were relatively unimportant. Among the Canadian Provinces, Alberta led with 958,000 pounds, followed by Manitoba with 241,000 pounds, and Ontario with 147,000 pounds. Manitoba led all States and Provinces in deliveries of frozen whitefish with 1,521,000 pounds, accounting for 86 percent of all the frozen whitefish.

LOADING AND UNLOADING FISH IN FULTON MARKET, CHICAGO

Receipts of lake trout totaled 6,118,000 pounds of which 17 percent arrived frozen. Michigan shipped 2,373,000 pounds; Wisconsin, 1,322,000 pounds; and arrivals from other States were comparatively unimportant. Among the Canadian Provinces, Alberta shipped 680,000 pounds; Manitoba, 627,000 pounds; and Saskatchewan, 446,000 pounds. Fresh and frozen lake trout were usually sold dressed with only a small amount filleted. Extra large fish were generally smoked.

Receipts of yellow pike, the third most important fresh-water variety, amounted to 4,791,000 pounds, six percent of which arrived frozen. Minnesota shipped 1,570,000 pounds; Ohio, 555,000 pounds; and Michigan, 458,000 pounds. Among the Canadian Provinces, Manitoba with 1,404,000 pounds led all others followed by Alberta with 347,000 pounds, the only other Province of importance which shipped any.

Chub receipts during 1947 totaled 2,785,000 pounds at Chicago. Fish shippers in Illinois supplied the largest quantity of chubs--963,000 pounds, followed by Wisconsin and Michigan with 909,000 pounds and 848,000 pounds each, respectively. Nearly all chubs were utilized for smoking and commanded consistently high prices throughout the year.

Yellow perch receipts amounted to 2,722,000 pounds, less than one percent of which were frozen. Ohio, the chief source of this variety, shipped 570,000 pounds; Michigan, 506,000 pounds; and Minnesota, 383,000 pounds. Among the Canadian Provinces, Manitoba was first with 303,000 pounds, Ontario was second with 248,000 pounds, and Alberta third with 146,000 pounds. Yellow perch usually arrived round. Large quantities were cut into butterfly fillets, and only negligible quantities were frozen round.

Shipments of lake herring totaled 2,390,000 pounds. Minnesota shipped 1,118,000 pounds; Wisconsin, 790,000 pounds; and Michigan, 465,000 pounds. Herring usually

arrived and were sold on the local market dressed, although a small percentage were filleted and frozen. Some lake herring were smoked when the supply of chubs was scarce.

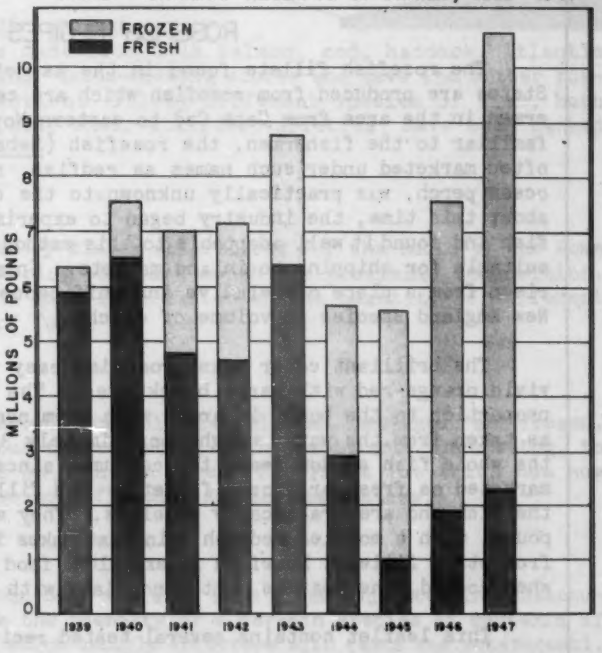
Arrivals of sauger totaled 1,423,000 pounds, of which 39 percent were frozen. Manitoba shipped 792,000 pounds fresh and 481,000 pounds frozen, and accounted for 90 percent of the total receipts. Saugers were usually sold round and dressed with a large percentage being filleted.

While receipts of Great Lakes smelt were relatively unimportant, the interesting feature was that the amount of the receipts indicated a gradual recovery of what was once a very important species among Chicago arrivals. In 1940 and 1941, smelt receipts on the Chicago wholesale market approximated 2,000,000 pounds yearly. In 1942, smelt arrivals were negligible, but have increased slowly each year until 1946 when 702,000 pounds were received. The 648,000 pounds received in 1947 is not to be taken as an indication of a decline in catch because much of the 1947 catch was packaged at the point of production and shipped to markets other than Chicago.

FROZEN FISHERY PRODUCTS

Prior to 1944 arrivals of fresh shrimp always exceeded those of frozen shrimp, sometimes by very wide margins (Figure 5). Since 1944, the opposite has been true, and frozen shrimp has gained in importance until frozen receipts in 1947 formed 79 percent of the total shrimp arrivals of 10,728,000 pounds. In 1943, frozen shrimp composed only 27 percent of the 8,793,000 pounds received.

FIG. 5 — CHICAGO RECEIPTS OF SHRIMP, 1939—1947



The gradual increase of frozen over fresh shrimp receipts is only part of a trend toward more frozen and less fresh fishery products which started in the Chicago market in 1946, and gained momentum in 1947 with indications that it would continue in 1948.

An additional indication of the general increase in the handling of frozen fish and frozen packaged fishery products was the increased receipts of halibut fillets and steaks from Alaska. At least one company filleted the bulk of its chicken halibut while other companies steaked and packaged a good portion of their purchases of halibut. Local dealers predict that a still greater portion of the 1948 and 1949 halibut catch will be processed into fillets and steaks.

Other species arriving frozen in increasing quantities on the Chicago market were cod, haddock, hake, whiting, and several species of lesser importance.

Some of the chief reasons for the growing use of frozen fishery products were advanced packaging methods, attractive display cases for frozen packaged fish, and the ease with which frozen packaged fish can compete with other frozen packaged food products. From the dealers standpoint, the use of more packaged fishery products will eliminate transportation of large quantities of round and dressed fish over long distances resulting in savings in transportation costs. This should result in lowering the price per pound and improving quality as fillets and steaks will be processed and frozen at production points.

Many chain stores, fish and butcher markets, and small grocers, now feature frozen food cabinets containing packaged fishery products, such as, packaged fillets, shrimp, scallops, and spiny lobster tails, along with frozen packaged fruits and vegetables. Some shops also display packaged precooked frozen fishery items.

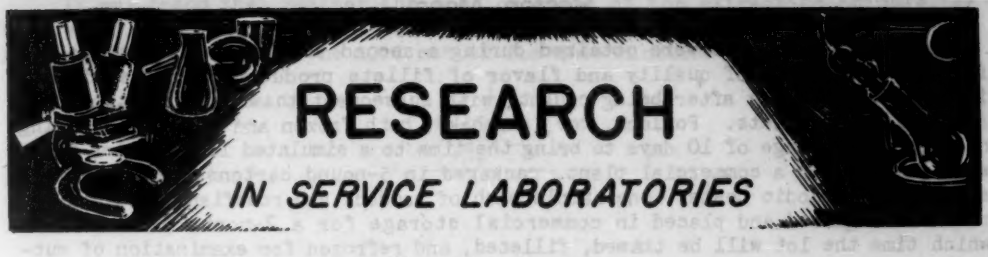
ROSEFISH RECIPES

The rosefish fillets found in the markets throughout the United States are produced from rosefish which are caught by New England fishermen in the area from Cape Cod to eastern Nova Scotia. Although long familiar to the fishermen, the rosefish (Sebastes marinus), which is often marketed under such names as redfish, red perch, sea perch, or ocean perch, was practically unknown to the consumer until 1935. At about this time, the industry began to experiment with filleting rosefish and found it well adaptable to this method of preparation and hence, suitable for shipping to inland markets. In a few years, rosefish has risen from a place of relative insignificance to rank first among the New England species in volume of catch.

The brilliant color makes rosefish easy to identify, for it is a vivid orange-red with large black eyes. The head, which is large in proportion to the body, is armed with prominent spines. Most rosefish as taken from the water weigh approximately 3/4 of a pound. However, the whole fish seldom reach the consumer since nearly all rosefish are marketed as fresh or frozen fillets. The fillets are the side cuts of the fish and are practically boneless. They are small, about 8 to the pound, with a mottled reddish skin that makes it easy to tell them apart from other fillets. Rosefish is excellent food fish with firm flesh and, when cooked, the meat is white and flaky with a delicate flavor.

This leaflet contains several tested recipes for rosefish fillets.

--Fishery Leaflet 285



October 1948
College Park, Md.

An experimental pack of canned Atlantic "little tuna" indicates that the pieces of flesh were smaller in size, running 6 to 10 per can as compared with 3 for the Pacific tuna. This is probably due to the smaller fish. The color was also deeper—best described as mahogany pink—than is common to packs of Pacific tuna.

* * *

The results of a periodic storage test show that sandwich spreads made from chum salmon, cod, haddock, Atlantic mackerel, and tuna gave the higher taste-testing scores and have the better possibilities for commercial production. Thirty different species of fish, both marine and fresh-water, principally under-utilized varieties, have been packed in this experimental series.

* * *

Twenty-nine samples of fishery dishes as prepared for the table by the Home Economists have been analyzed during the past month for proximate composition. The data are being calculated to give information on the quantity of different nutrients per serving portion of food.

* * *

Three hundred pounds of Boston mackerel were filleted, packaged, and frozen. These are being stored at various temperatures, both stable and fluctuating, to determine effect of temperature on storage life. The first lot which has now been stored for two months shows no difference due to temperature.

* * *

Bacterial cultures which had been isolated from clams and water in Massachusetts were studied to determine the identity of a certain species of bacteria of unknown pollution significance which usually interfere with tests for enterococci.

Boston, Mass.

Additional samples were obtained during a second trip of the Albatross III for further studies of quality and flavor of fillets produced from fish frozen in the round shortly after being caught, with subsequent thawing, filleting, and refreezing of fillets. Pollock, cod, and hake, both frozen and iced, after being held for an average of 10 days to bring the time to a simulated long trawler trip, were filleted in a commercial plant, packaged in 5-pound cartons, refrozen, and stored for periodic tests. One sample each of haddock and rosefish frozen in the round were glazed and placed in commercial storage for a 2-month period after which time the lot will be thawed, filleted, and refrozen for examination of subsequent storage life.

* * *

Isolation of cultures was begun for identification of the bacteria in the slime, gills, abdominal cavities, and viscera of iced haddock, both gutted and in the round, and frozen ungutted rosefish and haddock.

* * *

Informal meetings of fishery technologists in the area began last fall, were to be renewed with meetings to be held the first Thursday of each month.

Seattle, Wash.

When used as a fish hatchery food, viscera from Columbia River chinook salmon appears to have better nutritive value than that from Alaskan pink salmon. Viscera dried at a temperature of 100° F. as compared to 145° F. had more nutritive value. Dried fish viscera in a standard diet is much more valuable to fish living in warmer water. Thus, at the beginning and end of the season when water temperatures are lowest, the dried fish viscera did not materially affect growth. During the summer, it aided considerably in promoting a higher rate of growth of the fish.

* * *

It was found that powdered pumice is a better dispersing agent than anhydrous sodium sulfate when extracting oil from fish livers for analytical determination of vitamin A. The use of the former leads to a higher oil recovery. Petroleum ether was used as the solvent.

* * *

Mixed king crab body and leg meat packaged in tin or cellophane, showed little difference in quality after 20 weeks of storage at 0° F. Crab meat prepared and packaged originally from frozen crab legs was of good quality but was slightly tough and tended to show a slight off-flavor as compared to meat frozen from fresh crab. There was little difference in the quality of crab meat frozen with and without a weak sodium chloride brine to cover the meat.

* * *

A sample of Korean or horse crab (Erimacrus isenbeckii) found in numbers in the Bering Sea by the Pacific Explorer and the Washington was cooked and the meat found to be tender, highly-flavored, and quite edible.

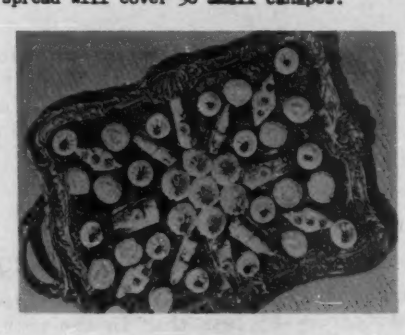
* * *

It was found that neither the size or shape of the extraction thimble, or the height to which the thimble is filled with meal are important variables affecting the precision of the AOAC method for determination of oil in fish meal.

SARDINE CANAPES

½ cup mashed sardines
½ cup grated egg yolk
1 tablespoon lemon juice
1/8 teaspoon worchestershire sauce
4 tablespoons mayonnaise or salad dressing

Blend ingredients together forming a paste. Spread on bread cut in desired shapes. Garnish with grated egg yolk, strips of pimiento and parsley. This spread will cover 36 small canapes.



TUNA FISH A LA KING IN PUFF SHELLS

1 13-ounce can tuna fish
½ cup green pepper, diced
3 tablespoons fat
3 tablespoons flour
1 cup milk
2 tablespoons pimiento, diced
½ teaspoon salt

Drain tuna and flake. Cook pepper in melted fat until tender. Add flour and stir until blended; add milk gradually and cook until thick and smooth, stirring constantly. Add flaked fish, pimiento and salt. Heat thoroughly.

Cut the tops off the puff shells and fill with the creamed fish mixture. Sprinkle with paprika or chopped parsley. Fills 36 puff shells. Any creamed fish or shellfish mixture may be used in place of the Tuna A La King.

Puff Shells

½ cup flour
1/8 teaspoon salt
2 eggs
½ cup boiling water
½ cup butter or fortified margarine

Sift flour and measure. Add salt and sift again. Combine butter and boiling water in saucepan; melt over low heat. Add flour all at one time and stir vigorously until mixture forms a ball and leaves the sides of the pan. Remove from heat. Add unbeaten eggs one at a time, beating thoroughly after each addition; continue beating until a thick dough is formed. Drop by teaspoonfuls onto a greased baking sheet. Bake 20 to 30 minutes. Makes approximately 36 one-inch shells.

TRENDS AND DEVELOPMENTS

Additional Increase in Freight Rates Requested

The railroads have supplemented their recent request to the Interstate Commerce Commission for an 8 percent increase in freight rates with a request for a further increase of 5 percent. In addition, they have asked that the Interstate Commerce Commission grant permission to place the 8 percent increase into effect immediately as an emergency measure. The original petition of the railroads has been set for a hearing commencing November 30. The request for an immediate emergency increase of 8 percent in freight rates will probably be acted upon prior to November 30.

The Department of Agriculture has filed with the Interstate Commerce Commission a reply to the railroads' supplemental petition. This reply requests that no emergency freight rate increases be granted and that the matter contained in the supplemental petition be set down for a full public hearing.

Additions to the Fleet of U. S. Fishing Vessels

A total of 117 vessels of five net tons and over received their first documents as fishing craft during September—45 less than in the previous month, but 16 more than in September 1947, according to the Bureau of Customs of the Treasury Department. Louisiana led with 27 vessels, followed by Washington with 20 vessels, North Carolina with 12 vessels, and Florida with 11 vessels. A total of 961 vessels received first documents as fishing craft during the first nine months of 1948 compared with 1,026 during the same period in 1947. Nearly two-thirds of the fishing vessels documented during the first nine months of 1948 had their home port in five States or Alaska. California led with 152; followed by Louisiana with 129; Washington, 114; Texas, 78; Florida, 73; and Alaska, 72.

Vessels Obtaining Their First Documents as Fishing Craft

Section	September		Nine mos. ending with Sept.		Total
	1948	1947 1/	1948	1947 1/	1947 1/
	Number	Number	Number	Number	Number
New England	3	7	42	45	55
Middle Atlantic	2	5	36	49	64
Chesapeake Bay	9	9	45	63	83
South Atlantic and Gulf	68	47	423	359	486
Pacific Coast	29	26	299	348	415
Great Lakes	3	4	36	34	45
Alaska	2	3	72	104	123
Hawaii	1	-	8	23	28
Puerto Rico	-	-	-	1	1
Total	117	101	961	1,026	1,300

1/ Revised.

Note: Vessels have been assigned to the various sections on the basis of their home port.

Agricultural (Including Fisheries) Problems in Latin America

A coordinated attack on problems raised in Latin America by shortages of agricultural requisites has been launched by the United Nations' Economic Commission for Latin America and the Food and Agriculture Organization. Shortages of fisheries equipment will also be covered.

This was made known October 15, through an announcement by the Acting Executive Secretary of ECLA, and the Director-General of FAO, of the establishment of a Joint Working Party from the staffs of the two organizations to study existing supply shortages which hamper the production and distribution of food in the Latin American region.

The Joint Working Party, composed of economists and experts in the field of agricultural requisites, started its field trip toward the end of October. The field survey will cover the 20 Latin American Republics, aiming at the development of agricultural production which not only will alleviate the food problem in Latin America, but which will make a substantial contribution to the world as a whole.

The Joint Working Party, similar to parties which are functioning in Europe and the Far East, arises out of a growing recognition of the close interrelationships between agricultural and general economic development in solving the world food problem.

Establishment of such a Working Party was called for by a resolution passed at the first meeting of the Economic Commission for Latin America held in Santiago, Chile, in June. Following a suggestion made at the Third Annual FAO Conference in Geneva last year, the Director-General of FAO requested that a special item on "Coordinated Action to Meet the Continuing World Food Crisis" be placed on the agenda of the Economic and Social Council of the United Nations at its sixth meeting in March 1948. Accordingly, the Economic and Social Council invited specialized agencies and the Regional Economic Commissions to carry out coordinated studies aimed at developing suitable measures for the elimination of shortages of agricultural requisites.

It will be a primary function of the Working Party to organize available data, gather additional information, and to draw a general picture of the Latin American situation. A report will be submitted to the second session of ECLA and to the Council of FAO.

The FAO/ECLA Working Party includes a fisheries technical advisor, Mr. Mogens Jul, head of the Technological Branch of the Fisheries Division of FAO.

Albatross III Finds Groundfish off Davis Bank

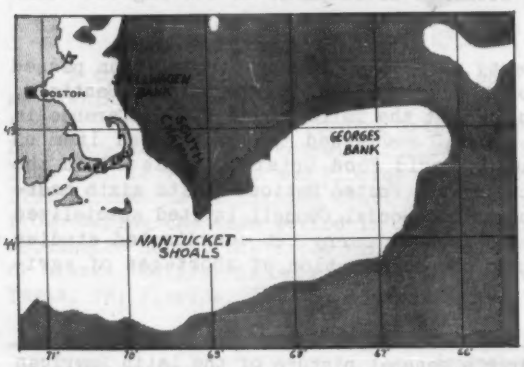
On its ninth cruise, September 8-10, 1948, the Albatross III found haddock, cod, whiting, and hake in commercial quantities off Davis Bank in 30 fathoms. This was the fourth in a series of cruises being made by the Service's research vessel to estimate the numbers of fish on Georges Bank and South Channel.

Evidence was found of fungus infection on the sea herring taken by the nets of the vessel. About ten percent of the 400 fish examined showed the characteristic skin eruptions. This disease has been very prevalent on herring all along the New England Coast for the past three years, but has not been reported from fish taken offshore.

The eighth cruise of the Albatross III was made on September 1, and was only a one-day trip, to demonstrate the methods used by the Service's scientists to study our North Atlantic fishery resources. A number of guests from interested agencies in Woods Hole, Boston, and New Bedford were invited to witness these operations.

Albatross III Completes Fish Census

The Service's research vessel, Albatross III, returned from its tenth and eleventh cruise (September 29-October 6 and October 14-19, respectively) to Woods Hole, Mass., after completing the first fish census of the region comprising Georges Bank, South Channel, and Nantucket Shoals. These were the last in a series of six cruises, begun in July, to survey the number of fish of commercial importance in the region. The survey constitutes one of the major accomplishments of the Albatross III during the summer and fall.



Georges Bank with the South Channel and Nantucket Shoals grounds, the principal fishing grounds for the fleets of Boston and New Bedford, comprises about 30,000 square miles of fishable bottom. This area is about equal to the area of the New England States, with the exception of Maine.

During the census cruises, the vessel occupied 110 different stations and made 145 successful hauls with the otter-trawl net. Stations were chosen so that all areas of the fishing grounds, whether fished commercially or not, were sampled in a representative fashion.

Data on the number, size, and age of all the commercial species taken were obtained from each haul. Temperatures of the sea water from surface to the bottom and other hydrographic data were taken at each station. Statistical methods, similar to those used by the various political and radio polls, will be employed in analysing the data collected.

No unusual quantities of the important commercial species were caught off Cape Cod, the area of these last two cruises. Whiting and white hake were the principal species taken. Some haddock and cod were caught and several small haddock from this year's spawning were brought up in the nets.

Preliminary experiments, under the direction of the Service's Technological Laboratory in Boston, on the freezing of fish at sea were started on these last two cruises. These experiments are designed to study the storage life and quality of fillets from fish frozen whole at sea, and defrosted, filleted, and refrozen at the shore plants. About 300 pounds of haddock and cod were frozen whole in the freezer of the Albatross III. A like amount was gutted and iced according to present commercial practice to compare with the frozen product.

It is expected that the census of Georges Bank, repeated periodically, will provide data on the relative numbers that result from commercial fishing, additions of young to the stock, hydrographic condition, and other factors which affect the fish populations.

California Studies Pacific Tuna Fishery

Ending a 9,000-mile voyage in Central Pacific waters, a marine biologist of the California Division of Fish and Game has brought back information on the mysterious albacore tuna, according to Outdoor California.

Now recognized as the State's most valuable commercial fish crop, albacore has been the subject of continuing study by the California Bureau of Marine Fisheries. The latest in a series of research investigations was a 6-week cruise of the Central Pacific with the Division's 100-foot vessel, the N. B. Scofield.

The exploration revealed albacore as far as 750 miles off the California Coast; yellowfin tuna weighing 8 to 30 pounds near Johnston Island; and albacore scarce in the Central Pacific. It was found that the Hawaiian Islands mark the northern boundary of large yellowfin and skipjack tuna populations.

The vessel embarked on another voyage November 1, for two weeks, in albacore research about 500 miles off the California Coast.

All evidence points to the fact that skipjack and yellowfin are tropical species, found in abundance off coasts and islands. Albacore and bluefin are believed to be temperate zone fish, visiting southern California and other coasts and islands seasonally.

The key to the albacore enigma is whether the fish found in California waters is a member of a larger population of albacore which makes the entire Pacific Ocean its home, according to the State Biologist.

Deputy Administrator Named for Philippine Fishery Program

Leroy S. Christey, of Tacoma, Wash., was appointed deputy administrator of the Service's Philippine Fishery Program, October 27, by the Service's Director.

Mr. Christey has been in the Fish and Wildlife Service (and its predecessor agency, the Bureau of Fisheries) since 1934, with the exception of the past three years. Since 1945, he has been employed by the Reconstruction Finance Corporation as manager of its exploratory fishing program.

He entered the Federal fishery service immediately after his graduation as an economics major from the University of Washington; did fishery research in Alaska until 1936; served for the next two years on the staff of the Seattle Fishery Technological Laboratory; in 1940, headed the field party of the Alaska Crab Investigation; during the war, was in the Office of the Coordinator of Fisheries, and later chief of the Market Development Section in the Service's Branch of Commercial Fisheries.

Mr. Christey, who departs for Manila about November 1, will assist in the planning and administration of the Philippine Fishery Program and will act as an economic adviser to the Philippine fishing industry.

Established by the 79th Congress' Philippine Rehabilitation Act of 1946, the Service's Philippine Fishery Program has explored new fishing grounds, introduced new methods of fishing, and has advised the Philippine Government in the management and development of the Islands' fishery resources. Hugh W. Terhune is the Program's administrator.

Exploratory Operations of Washington

Owing to extremely stormy weather which made fishing impossible in the Bering Sea, the Service's Alaska fishery exploratory vessel, Washington, proceeded to the south side of the Alaskan peninsula the early part of October and fished in the vicinity of Pavlof Bay and Canoe Bay.

Indications of cod, lemon sole, and rock flounders were found in the vicinity of St. Lawrence Island. The fish were of good quality. Some turbot and mud sole were found 150 miles southeast of St. Paul Island, and two drags in the Akutan area produced turbot and rock flounders but practically no cod or king crab.

The vessel returned to Seattle the latter part of October where it will undergo extensive alterations in order to increase its efficienty as an exploratory fishing craft. (See Commercial Fisheries Review, November 1948, page 29.)

ECA Procurement Authorizations for Fishery Products

Among the procurement authorizations for commodities and raw materials announced by the Economic Cooperation Administration, procurement authorizations for fishery products for November, the leading month to date, totaled $4,185,000.

The aggregate authorized since the beginning of the ECA program on April 1, 1948, was $20,888,911.

ECA Procurement Authorizations for Fishery Products

Product	Country of Origin	Procuring Agency 1/	Recipient Country	Amount Authorized
November 1948				
Fish, salted	Newfoundland	Greece	Greece	$ 1,090,000
	"	Italy	Italy	565,000
	"	"	"	565,000*
	Canada	"	"	185,000
	"	"	"	185,000*
	"	Greece	Greece	390,000
Total				$ 2,980,000
Fish meal	Canada	Denmark	Denmark	391,000
Oil, whale	U. S.	Netherlands	Netherlands	814,000
Total authorized in November				4,185,000
Total ECA Fishery Products Authorizations, April 1 - November 30, 1948				
Fish, canned	U. S.	Greece	Greece	128,800
Fish, salted	Newfoundland & Canada	Italy & Greece	Italy & Greece	7,259,000
Fish meal	Canada, Iceland, Norway & Angola	Denmark, Austria, & U.S.Dept.Army	Denmark, Austria, & Bizone Germany	3,457,361
Oil, herring	Iceland	U.S.Dept. Army	Bizone Germany	1,694,000
" , seal	Newfoundland	France	France	257,600
" , shark liver	Chile	Chile	France	800,000
" , technical fish	U. S.	U.S.Dept. Army	Bizone Germany	100,000
" , whale	Netherlands, Belgium, & Norway	Austria & U.S. Dept. Army	Austria & Bizone Germany	7,192,150
Grand Total Authorized				$20,888,911

*For delivery in first quarter, 1949

1/Where the recipient country is shown as the procuring agency, the Government of the participating country or its authorized agents or importers do the purchasing.

This is only a small percentage of the amount of trade in fish and fishery products for the 15-month period, April 1948-June 1949, which was to have been financed by ECA as announced by that agency at the beginning of its program. It was also estimated that the United States would ship 51.8 million dollars worth of fish and fishery products during the 15-month period, but for the first eight months, only $1,042,800 worth of shipments have been authorized.

Federal Purchases of Fishery Products

DEPARTMENT OF THE ARMY, September 1948: Fresh and frozen fishery products purchased during September 1948 by the Army Quartermaster Corps for the U. S. Army, Navy, Marine Corps, and Air Force for military feeding amounted to 1,571,665 pounds valued at $569,821. Of this total, a small amount (3,500 pounds) was destined for relief feeding. The total purchases to date, January through September, totaled 12,672,316 pounds valued at $4,501,819.

Food Situation in Europe1/

The unused lands of the world capable of food production are no longer unlimited. Moreover, many of the existing lands are losing their fertility as the

1/Extracts from an address by Sir Herbert Broadley, Deputy Director-General of FAO, at Green Lake, Wisconsin, on September 13, 1948.

result of centuries of misuse and soil erosion and may have to be rested for long periods before they can provide their present outputs over a long future period. And in the meantime, populations are increasing at an alarming rate, while countries which previously supplied Europe with food are industrializing themselves in the vain hope that industrialization alone will mean a higher standard of life.

More mechanization, more up-to-date methods of farming, and increased use of fertilizers will all be needed in Europe. In these fields, FAO will be able to render help and advice.

But while Europe's land resources must be developed efficiently and with wisdom, the sea may provide new resources awaiting development. This will be particularly important if the pressure of population leads to greater and greater intensification of food production, and therefore involves an increasing drain on the soluble nutrients of the land.

To all intents and purposes, it is true that matter cannot be destroyed, and in a sense nothing is really ever wasted. On the other hand, even though not wasted, its availability may change. For instance, the continual inundation of the earth by the greatest of all solvents--water--has the effect of washing the end products of life into the rivers, the draining systems, and eventually into the sea, so that in the very long term, man must turn his attention to this great reservoir of energy and materials, and reclaim them for himself and the land. He may do this in two ways. First, he might utilize to a much greater extent the living products of the sea, and second, he might use it as an inexhaustible source for some of the chemical elements which he needs to maintain fertility of the land. And so the oceans, which first gave rise to life, may eventually become the ultimate source of its maintenance.

Increased Ice Charges by Railway Express Suspended

In connection with the request of the Railway Express Agency for increases in the ice charges, the Department of Agriculture, during the latter part of October, requested that the Interstate Commerce Commission suspend and investigate the tariff schedules containing these increases.

On November 19th, the Commission announced that charges for ice as filed by the Railway Express Agency in ICC-I and S-5612 were suspended.

Hearings concerning these charges will be held at Chicago, Ill., in January.

Personnel Changes

Branch of Commercial Fisheries

C. F. EVERS TO HEAD COLLEGE PARK LABORATORY: Clifford F. Evers, of Millburn, N.J., was named to head the U.S. Fishery Technological Laboratory at College Park, Md., on November 1.

Formerly technical director of the National Association of Frozen Food Packers, and a graduate from the University of Michigan in 1929 with a B.S. degree in chemistry, Mr. Evers succeeds to the position held by the late Dr. L. A. Sandholzer.

As head of the Fishery Technological Laboratory in College Park, Md., Mr. Evers will be in charge of six research projects: the determination of food values of cooked fishery products; the correlation of biological and spectrophotometric methods for determining vitamin A potencies; the determination of the rate of digestion of certain fishery products; the preparation of canned sandwich spreads for the school lunch program; the effect of fluctuating temperatures on the quality of frozen fish in storage and transit; and the identification of micro-organisms causing spoilage of fish and shellfish.

Proposed Indo-Pacific Fisheries Council

The Siamese Government has notified the Food and Agriculture Organization of its acceptance of the Agreement reached at Baguic, Republic of the Philippines, on February 28, 1948, for the formation of an Indo-Pacific Fisheries Council. France, the Philippines, and the United States also have accepted the agreement. When a fifth Member Government accepts, FAO will proceed to establish the Council. (See Commercial Fisheries Review, August 1948, page 17).

Washington State Landings, 1947

The 1947 production of fish, shellfish, and livers for the State of Washington totaled 146,477,625 pounds, an increase of 2,500,110 pounds over the 1946 total of 143,977,515 pounds, according to the 1947 Annual Bulletin of the Washington Department of Fisheries. The landings in 1947 consisted of 128,607,625 pounds of fish, 15,528,622 pounds of shellfish, and 2,341,378 pounds of livers.

Washington State Landings of Principal Species - 1947
(In thousands of pounds)

Fish:		Pilchard	2,850
Salmon:		True cod	2,451
Chinook or king	12,496	Sablefish (Black cod)	2,098
Chum or fall	6,774	Herring	1,195
Pink or humpback	51,846	Flounders	1,044
Silver or coho	11,948	Shellfish:	
Sockeye or blueback	1,336	Crabs	11,973
Steelhead	283	Clams:	
Total salmon	84,683	Hard shell	1,224
Sole	8,320	Razor	2,014
Rockfish	6,518	Livers:	
Halibut	5,887	Shark:	
Albacore tuna	4,243	Dogfish	1,834
Lingcod	3,456	Soupfin	70

The leading item was salmon, all species, with a total of 84,683,154 pounds of which 51,845,708 pounds consisted of pink or humpback salmon. Crabs was the next item of importance with 11,973,160 pounds, followed by flounders and sole with 9,364,235 pounds, and rockfish with 6,518,414 pounds.

Wholesale and Retail Prices

Reversing the upward movements of the previous months, the wholesale index for all commodities on October 12 showed a decline of 2.6 percent compared with September 14, but 4 percent higher than a year ago. Wholesale food prices continued to decline at a greater rate, and the October 12 index for all foods was 6.3 percent under September 14 and 0.8 percent under October 14, 1947.

The wholesale average price of canned pink salmon at Seattle during October 1948 was 1.1 percent higher than September and 25.5 percent higher than October 1947. The average price of canned red salmon remained steady and was 8.6 percent higher than a year ago.

Wholesale and Retail Prices

Item	Unit		Percentage change from--	
Wholesale: (1926 = 100)		Oct.12,1948	Sept.14,1948	Oct.14,1947
All commodities	Index No.	165.0	-2.6	+ 4.0
Foods	do	177.3	-6.3	- 0.8
Fish:		Oct.1948	Sept.1948	Oct.1947
Canned salmon, Seattle:				
Pink, No. 1, Tall	$ per doz. cans	5.910	+1.1	+25.5
Red, No. 1, Tall	do	6.649	0	+ 8.6
Cod, cured, large shore, Gloucester, Mass.	$ per 100 lbs.	15.00	0	+ 5.3
Retail: (1935-39 = 100)		Oct.15,1948	Sept.15,1948	Oct.15,1947
All foods	Index No.	211.5	-1.7	+ 4.9
Fish:				
Fresh, frozen, and canned	do	325.9	+3.5	+13.8
Fresh and frozen	do	270.2	+2.3	+ 8.6
Canned salmon:				
Pink	¢ per lb. can	59.4	+5.5	+23.8

The drop in retail food prices from mid-September to mid-October was much greater than the usual seasonal decline and marked the third consecutive month of falling prices for foods. The retail food price index on October 15 was 211.5 percent of the 1935-39 average, 2.4 percent below the peak reached in July 1948, but 4.9 percent higher than a year ago. The retail fresh, frozen, and canned fish index was 325.9 percent of the 1935-39 average, 3.5 percent higher than on September 15, and 13.8 percent higher than a year ago. The greatest increase was in fresh and frozen fish. The average retail price of canned pink salmon on October 15 also was 2.9 percent higher than the previous month and 23.8 percent higher than a year ago.

FISH OF THE PERSIAN AND OMAN GULFS

The total number of fishermen on the southern coast of Iran is estimated at 8,000. Merchants, in the several ports, usually contract with groups of 12 to 16 fishermen, furnishing them the necessary equipment. For the use of such equipment, the fishermen deliver to the merchants 50 percent of their catch. The remaining 50 percent is divided equally among the fishermen except that the crew captain or "Nav-Khoda" usually receives twice as much as an ordinary fisherman.

--Fishery Leaflet 304

Australia

PER CAPITA FISH CONSUMPTION: Preliminary figures of per capita fish consumption in Australia for the year ended June 30, 1947, indicate 5.3 pounds of fresh and 3.0 pounds of canned fish as compared with an average per capita consumption in the last three prewar years of 6.4 pounds of fresh and 4.1 pounds of canned fish, according to the October 1948 Canadian Trade News.

* * * * *

FISHERIES DEVELOPMENT: Permanent Fisheries Authority Established: For a number of years, consideration has been given to the need for study of Australia's fishery resources, methods, conservation, etc., according to the October 2 issue of the Canadian Foreign Trade. In 1941, the Commonwealth Tariff Board recommended that a Fisheries Developing Authority be established to "lead in organizing and developing the commercial side of the industry."

During the war, the Fisheries Division of the Department of War Organization and Industry was established to ensure that the Australian fishing industry participated fully in the war effort. When the wartime emergency had ended, a permanent Commonwealth Fisheries Authority was established and, in the early part of 1946, the Commonwealth Fisheries Office was set up within the Department of Commerce and Agriculture of the Australian Government. Later that year, a Director of Fisheries was appointed.

Functions of Fisheries Officials: Under the constitution of Australia, it was necessary to define the relation between the Commonwealth and the States, and at a conference, held early in 1947 and attended by the chief fisheries officers of the States, the respective spheres of the Commonwealth and the States were determined. The Commonwealth officers are, in general, responsible for the control of extra-territorial waters, whaling and pearling, rehabilitation of ex-servicemen in the fishing industry, fishery training schools, commercial development of the industry, promotion of uniform conditions as regards catches, statistics, and similar information.

Functions of the Commonwealth Fisheries Development Authority comprise:

1. Rehabilitation of the pearling industry;

2. Establishment of coastal whaling--a Norwegian has been engaged to develop this section of the industry as a potential earner of dollars through the demand for and prevailing high price of whale oil;

3. Development of purse seining to catch pelagic fish, such as horse mackerel, pilchards, and tuna;

4. Conservation of trawling grounds off New South Wales and Victoria, where overfishing has been indicated;

5. Exploration of fishing possibilities in adjacent waters, such as those of New Guinea;

6. Experimental work (by the Council of Scientific and Industrial Research) on Japanese oyster culture, and, at a later date, on pearl culture.

Valuable Research Work Undertaken: The research work being done by the Council of Scientific and Industrial Research is divided into two main sections: exploratory and biological. The exploratory work, which was begun in 1938, was interrupted by the war. The early investigations were concerned with oceanographic surveys and with pelagic fish in the waters of southeast Australia. Investigations up to the present indicate that marine conditions in Australian waters are tropical and sub-tropical and resemble those in similar latitudes in the Southern Hemisphere, where offshore banks are absent and the catch is moderate rather than large.

On the biological side, the distribution, habits, rate of growth, spawning, migration, and life histories of the important commercial fish are being studied, particularly pelagic fish such as tuna, mackerel, pilchards, sprats, barracouta, and Australian salmon; trawl fish of southeast Australia; and certain estuarine fish, e.g., mullet and bream. The investigations which have been and are being made are designed to determine conditions in various sections of the industry, so that production may be kept at a productive level and operated economically.

Research has also been done in the cultivation of rock oysters, and a small shipment of Japanese oysters has recently arrived in Australia. Study is being made of the Tasmanian scallop beds and of the biology of the crayfish of Western Australia and Tasmania.

Fisheries Training School: A training school for ex-servicemen has been established near Sydney. Twenty weeks are spent in basic training, after which specialization is undertaken in the branch of the industry which the student intends to follow. During the training period, the ex-serviceman is paid under the Commonwealth Reconstruction Training Scheme allowances. Among the subjects taught are

AUSTRALIAN SEA GARFISH (AS A TABLE FISH, RANKS WITH THE BEST)

fisheries technology, economics, biology, administration, navigation and meteorology, and food technology. The school operates two trawlers and several smaller working boats.

Production, Fiscal Year 1945: There were 8,086 boats and 14,612 men engaged in the industry. The fishing industry is not large, considering the extent of Australia's coast line. (See table, page 31.)

Fish Marketing Methods Chief Problem: The chief problem in the fishing industry is considered to be improvement in marketing methods rather than production. There are periods of gluts and shortages. Queensland has set up a Government Fish Board to establish an orderly marketing system, and New South Wales is developing control through co-operatives.

Fish Canning Industry Developing: Although the fish canning industry is relatively small and statistics of production are not available, operations are being carried on in Australia. Crayfish, scallops, and whitebait are canned to

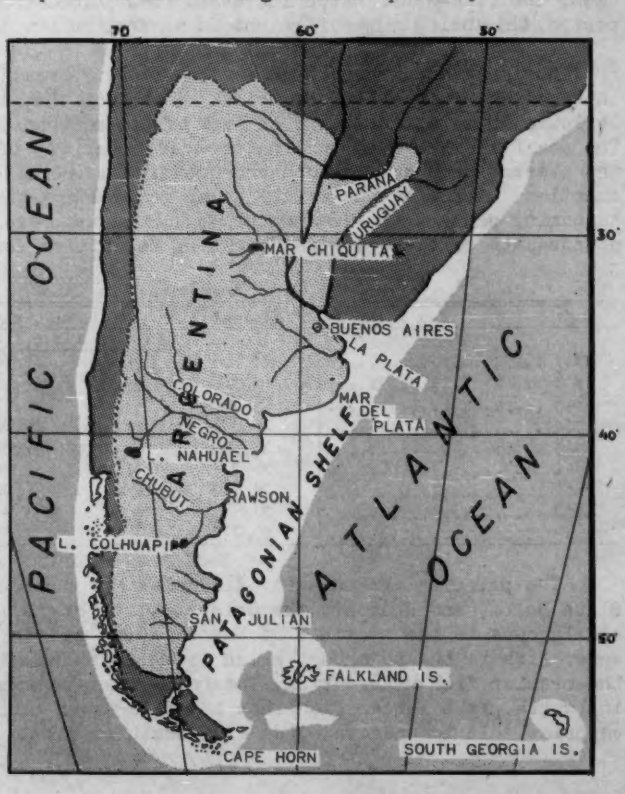
Australian Production of Fisheries

Item	Unit	Year ended June 30, 1945	Year ended June 30, 1939
Fish, fresh	lbs.	63,690,000	68,626,000
Oysters	"	6,438,768	9,984,240
Prawns	"	197,232	1,069,040
Total		70,326,000	79,679,280
Crabs	doz.	18,495	20,863
Crayfish (spiny lobsters)	"	127,775	163,757

some extent, particularly in Tasmania. Some fish is packed as "fresh fillets," probably mullet and garfish. Canned "salmon" is on the market, but this is reported to be a fish of the mackerel family.

Argentine Republic

CONSUMPTION AND DEVELOPMENT OF FISHERIES: Per Capita Consumption of Fish Extremely Low: Per capita consumption of fish in Argentina is probably the lowest of all countries for several reasons, according to the Canadian publication, Foreign Trade, of September 25. Chief among these is the low price and high quality of meat which is available in quantity to all classes of the population. The price of fish in Argentina is high compared with that of meat. Cod, for instance, costs about four times as much as meat, making it a luxury rather than a poor man's food, as is the case in other countries. Friday is not regarded as a fish day by the majority of the population, except in the Lenten season. The consumption of fish during this period is perhaps more a tradition than the observance of a regulation. There is an almost total lack of effort towards increasing the consumption of fish by means of publicity.



Fish consumption, therefore, is limited to the high-income groups, tourists, the patrons of first-class restaurants and hotels, and recent

immigrants who, in most cases, eventually adapt themselves to the use of Argentine foods. Fish is normally used as an hors-d'oeuvre or as an entree, but seldom constitutes the main course of a meal, even of a light lunch. For middle-class purchasers, the use of fish is a luxury and is limited to an occasional meal.

Buenos Aires and the other large cities of the Atlantic seaboard are the consuming centers for fish, its use being practically negligible in the interior. At Mar del Plata, center of the Argentine sea fisheries, there is a demand during the summer season for fresh fish at a fair price, but mostly by foreigners. To meet the demand, Argentina relies on domestic supplies and imports, of which only a very small part is fresh fish.

Consumption of fish in Argentina, estimated on an edible basis, was 76,446,000 pounds annually for the period 1937-42. The per capita consumption on the same basis was 5.7 pounds. In 1942, however, the per capita consumption decreased to 4.6 pounds, which was due to the sharp decrease in imports and to the relatively large exports.

Slow Development of Argentine Fisheries: In spite of a fairly long Atlantic coast line, vast river basins and numerous inland lakes, the fishing industry in Argentina has not experienced great development compared with the exploitation of other natural wealth. The fresh-water catch, for example, declined considerably during the 1939-46 period, falling off from 20,700 metric tons in 1939 to approximately 15,000 tons annually for the years 1944, 1945, and 1946. On the other hand, the salt-water catch increased from 34,600 to 41,345 metric tons during this period, this being only sufficient to neutralize the decline in fresh-water fishing.

Strictly speaking, there are no fishing communities in Argentina similar to those existing in other countries. The fact that the production of fish is restricted is more the result of lack of demand than the lack of available supplies. The sea fisheries of Argentina produce a variety of fish in good quantities and the present production could undoubtedly be increased to meet a much higher consumption. Although the main fishing grounds are close to Buenos Aires, the large consuming center, the demand for fish has not developed. There is also a lack of adequate cold storage and handling facilities for fresh fish.

Argentine Fish Catch

Year	Fresh-water	Salt-water	Total
	(In Metric Tons)		
1947	23,765	41,367	65,133
1946	15,910	41,245	57,255
1945	15,368	38,820	54,188
1944	15,907	41,081	56,988
1943	24,394	37,513	61,907
1942	26,287	31,342	57,629
1941	23,510	36,055	59,556
1940	20,686	33,958	54,644
1939	20,737	34,580	55,317

The principal fresh-water fisheries are those of the Paraná River, the River Plate Delta, and Uruguay, the Colorado, the Negro, the Chubut and several lakes and lagoons in the province of Buenos Aires and in the south. Among the fresh-water fish is the pejerrey, which is most in demand and generally considered as the premier fish of Argentina. The fresh-water pejerrey, which may attain 27 inches in length, is a larger fish than the salt-water variety to which it is considered superior. It is unknown outside of South America.

There is also a wealth of trout, shad, and other edible species, such as the dorado, the pati, the surubí, the pirapitá, the boga, the pacú, the tararira, catfish, etc., in Argentine rivers and lakes. In the lakes bordering on the Andes, there is also available trout, salmon, and salmon trout, but the distance from markets prohibits any commercial exploitation. There are also a number of larger lakes, the most important of which are Mar Chiquita, in the province of Cordoba, and Nahuel Huapi, in the territory of Rio Negro, where other species of sporting fish are found, which are of interest to the tourist trade of this region.

The local sea-fishing is still of comparatively minor importance. There are good fishing grounds with promising catches, but development is slow. This condition will remain so long as retail prices of fish continue at the present high level compared with the price of meat.

Extensive Coast Line is Rich in Marine Life: Argentina's Atlantic coast line extends over 1,600 miles, with the ocean shelves, estimated at approximately 400,000 square miles, rich in marine life. The Patagonian shelf is similar to that of the North Sea and, according to experts, it is even richer in edible species of fish. Actually, however, only whale and seal hunting, the latter in a small way, is carried on along the Patagonian coast, because of the lucrative trade in sealskins, whale oil, and the various byproducts obtained. There is little or no fishing in this region for eating purposes, except for immediate local use.

The principal Argentine sea-fishing center is located at Mar del Plata, south of La Plata estuary, but the area around Bahia Blanca, in the southern part of the Buenos Aires province, is rapidly becoming an important fishing center. Found in these areas are the pejerrey; the corvina and the pescadilla, both of which will reach 20 inches in length; the caballa or mackerel; the lenguado (sole); the anchovy; the prawn; the bonito (striped tunny); the congrio and the merluza. The merluza is the most common and is rich in vitamins A and D, but both the corvina and the pescadilla find a ready market with the cheaper trade. The bluefish and anchovy are the fish used most generally for canning purposes, although good quantities are also sold in the fresh state. The sea catch also includes the lemon fish, the brotola, the sea bream, and the flounder.

Commercial Shark Fishing Started in Recent Years: Shark fishing and the processing of shark really got under way commercially in Argentina in early 1945. The foreign demand for shark liver oil, rich in vitamin A, gave a great impetus to this industry. Some varieties of Argentine sharks, especially the cazon, have extremely high vitamin content, their only commercial superior being the soupfin, caught off the coast of California. According to official statistics, the Argentine shark catch rose from 7.5 metric tons in 1935 to more than 7,000 metric tons in 1944.

Shark fishing is carried out in Argentina along the Atlantic Coast, from Mar del Plata to the bay of San Julian, with its headquarters located at Mar del Plata. Two companies began working in Puerto Rawson in 1944, establishing plants there for the extraction of oil and the curing of shark meat. By 1945, four additional companies had initiated fishing activities there.

In Mar del Plata, there are some 24 factories processing shark products and byproducts, 15 of these being engaged in extracting shark liver oil. During 1944, there were 150 launches engaged in fishing from this center, including several 40-ton fishing smacks.

In addition to the oil extracted from the liver, the shark is used in its entirety, the meat, hide, fins, and byproducts (glue and gelatin) all having great commercial value. Shark meat, salted and dried, is canned as bacalao (cod), or converted into fish meal. The hide provides an excellent raw material for the shoe, handbag, belt, etc., industries.

The chief importer of Argentine shark liver oil is the United States, with purchases amounting to 250 tons in 1945. Shark liver oil is also exported in lesser quantities to Uruguay, Chile, Venezuela, and Brazil.

Whaling Industry: The whaling industry in the Argentine Republic goes back to the beginning of the present century and there is only one firm engaged at present in whaling activities. All operations are carried out in Antarctic waters and the stations for processing the whales and extracting the oil are located on the island of South Georgia, near which the whales gather during the hunting season, which lasts from October 15 to April 15. The whaling company, which began operations with sailing vessels and hand harpoons, has progressed to large tankers and power harpoons. At present, the fleet consists of two tankers of 7,000 and 9,000 tons, respectively, for the transport of the oil from South Georgia to the Argentine market. The 9,000-tonner is also fitted to accommodate over 300 men to and from the island. The company has eleven catchers of approximately 300 tons each, which hunt the whales and bring them to the factory in South Georgia. In addition to the extraction of oil, the factory carries out experiments in byproducts, such as the making of meat extracts, the processing of glands, etc. The island possesses a floating dock and a complete marine repair and machine shop.

The annual catch for the last two years has been between 9,000 and 10,000 metric tons. At present, a floating factory of 32,000 tons is being built in Belfast. Two 10,000-ton units are being built in the Victoria shipyards in Canada for general fleet work.

FISH EXPORTS NOW EXCEED IMPORTS: Introduction: Argentina was one of the largest fish importing countries in South America prior to 1942, according to an article appearing in the Canadian Foreign Trade of October 9. In that year, exports of fish more than doubled imports, placing the country on a net exporting basis for the first time. Exports of dry and preserved fish, fresh fish, and seafood have been made to many countries.

Canning Industry: The local canning industry is of comparatively recent growth. There are several factories in operation at the present time that pack most of the local fish in brine or in olive oil. The output of canned anchovy is already seriously affecting imports. In addition to the local catch, imported frozen salmon is normally canned by several factories, although the production is not very extensive. Similarly, canned frozen tunny is also produced in small quantities.

Fish canning is centered at Mar del Plata and Buenos Aires. In 1934, there were 12 fish canneries in Argentina and their production amounted to some 947 metric tons of canned fish; whereas, in 1939, the number of canneries had increased to 26, including those of less than 5 employees, which turned out 3,230 metric tons valued at 2.3 million pesos (approximately $671,600).

The most recent available official statistics (1941) place the number of canneries, with 5 or more employees, at 32. Estimates, however, place the total number of fish processing establishments for 1946 as high as 180. These 32 can-

neries in 1941 employed 1,113 workmen with annual salaries of 592,000 pesos (approximately $166,293) and processed 3,486.7 tons valued at 3.4 million pesos (approximately $955,060). Anchovies remained the main fish item canned, but the industry is now preserving a great variety of other fish, including besugo (sea bream), corvina (croaker), congrio real (royal conger eel), lisa (mullet), merluza (hake), pejerrey, palometa (river bream), pez azul (bluefish), almejas (clams), camarones (small shrimps), and mejillones (mussels).

Cured Fish Industry: Cured fish production in Argentina in recent years has been as follows: 1940--50,706,000 pounds; 1941--57,320,000 pounds; 1942--61,729,000 pounds. The rise in production is attributable to the sharp decline in cured fish imports. Merluza and corvina are used in the preparation of a local cod-type dried and salted fish, while anchoita (small anchovy) tends to replace imported cured sardines. Local production is sufficient to meet the demand for cured fish and may even provide a small exportable surplus in the future.

Fish Exports: Other importers of Argentine fresh fish and seafood and dry and preserved fish, besides the United States, include: Brazil, Uruguay, Paraguay,

Argentine Exports of Fishery Products, 1938-47

Year	Dry and Preserved Fish		Fresh Fish and Seafood		Year	Dry and Preserved Fish		Fresh Fish and Seafood	
	To U.S.	Total	To U.S.	Total		To U.S.	Total	To U.S.	Total
	lbs.	lbs.	lbs.	lbs.		lbs.	lbs.	lbs.	lbs.
1947	127,593	502,073	28,147	382,171	1942	1,791,836	2,779,814	4,600	338,349
1946	25,969	724,940	1,496	172,773	1941	1,115,732	1,520,985	301,664	519,413
1945	3,245	830,650	2,156	165,246	1940	560,666	888,111	12,544	117,889
1944	35,959	1,649,142	3,740	241,795	1939	378,699	903,113	572	162,994
1943	4,994	3,228,997	9,185	311,496	1938	49,095	595,265	5,069	208,815

United Kingdom, Sweden, South Africa, Peru, Greece, Spain, Panama, Colombia, Switzerland, Venezuela, Portugal, Bolivia, Mexico, Italy, Norway, Cuba, Ecuador, Costa Rica, Guatemala, Dutch Guiana, Canada, and several others of minor importance.

Fish Imports Limited: Up until 1942, Argentina was a deficit country, that is to say, imports of fish were higher than exports. With the development of the local industry, however slow, imports are becoming limited to a few selected fish of which the most important individual items are herring, cod, canned sardines, and oysters. Imports also include lobsters, crabs, fresh fish, and fish in brine, of which European countries are the traditional suppliers.

In view of the available supply of fresh fish within easy distance of the principal consuming centers, imports of fresh, frozen, smoked, salted, and tinned fish are relatively large. This is due to the fact that certain species are not available in Argentine waters or that they are not yet exploited to any extent. Furthermore, there is practically no drying or salting of fish locally, although the canning industry has been showing considerable development during the past few years.

The principal suppliers of herring to Argentina are the Netherlands, as the more moist Dutch pack is generally preferred. During the period 1935-39, herring in brine or pressed was also supplied in smaller quantities by Finland, Spain, Iceland, Eire, Sweden, and the United States. However, during the war, supplies came mainly from the United States and also from Chile, Newfoundland, and Canada.

In 1941, European sources of supply of smoked herring were completely cut off and the only smoked herring which entered Argentina during the war years came from the United States, Newfoundland, and Canada in a lesser degree.

The importation of canned herring was discontinued during the war and has since been practically nil. The demand had always been negligible.

Cod is One of Most Staple Fish Imports: Cod is one of the most staple of Argentina's fish imports. A total of 6,331,717 pounds of whole dried cod was imported into Argentina in 1947, compared to 2,491,797 pounds in 1946, and 10,311,915 pounds in 1939. Two types of cod are imported: the ling (Scottish), averaging 36 inches in length and 11 inches at the widest point, and the Norwegian type averaging 24 inches. The ling is a dry salt fish, split, with fins and tails but without bones, outer skin, and head. The bulk of the Norwegian cod is the ordinary dry salt cod of uniform size.

Norway and Scotland have always shipped cod to Argentina in hermetically sealed tin boxes to protect the fish from heat and dampness during the long voyage and the period it is in storage before being released by the customs authorities. This is the only practicable method of shipping cod to this market.

Only the highest grade of cod is imported. There is no demand for small fish as in some West Indies markets.

There is a substantial demand for dried cod the whole year round in Buenos Aires and in Argentina generally. Before the war, the total consumption was in the neighborhood of 120,000 boxes per annum, but the nigh prices of today have cut down sales very materially.

There are two standard type boxes used for this market: one of wood containing 100 pounds net, not lined, and another containing 90 pounds net, lined with tin plate. Demand is mainly for the unlined boxes owing to the lower price. The type of cure is dry, hard, and salted. The fish is split, skinned, and trimmed but not boned. There is very little interest in the soft, dry, salt cure. Apart from the fact that the public does not like it even though it may be a better cure, there is the fact that it perishes more quickly than the hard cure.

Bizone Germany

GERMAN FISHING VESSELS: The first postwar German fishing vessel to be built in Hamburg left on its maiden voyage on September 28, 1948, according to the American Consulate General at Hamburg. The vessel has the following measurements:

Gross tonnage	399.41	metric tons
Loading capacity	3,260	baskets of fish
Bunker capacity	230	tons
Fish oil storage tanks	9.7	cubic meters
Overall length	42	meters
Machine power	650	h.p.
Speed	11	knots

The vessel carries a crew of 19, including the captain.

A second vessel was launched during the first week in October at Hamburg. Two other vessels are being built in Luebeck and should be ready to sail in November.

LOBSTER FISHING: Lobster fishing has been resumed in the Helgoland area. Prior to the war, the catch amounted to an average of 154,000 pounds annually. At present, because of equipment shortages and other difficulties, the annual catch amounts to approximately 33,000 pounds. Fishermen state that lobsters of 4 to 5 pounds are common with a record 17-pounder reported early this season.

British Honduras

FISHERIES ORDINANCE, 1948 PASSED: A law regulating the fisheries of the colony and imposing export duties on fish and shellfish was incorporated in "Fisheries Ordinance, 1948" which was passed by the Legislative Council on March 30, and brought into force by the Officer Administering the Government on September 24, according to an early October report from the American Consulate at Belize.

Under Section 6 of the Ordinance, Fish (Export Duty) Order, 1948 states:

> There shall be raised, levied, collected, and paid an export duty on all fish taken within the waters of, and exported from, the Colony, such export duty to be paid by the exporter and to be at the following rates:
>
> (a) On crawfish (commonly known as crayfish, rock lobster, and shellfish), one and one half cents a pound on gross tail weight;
>
> (b) On other fish whether fresh, salted, smoked, or cured, one cent a pound.

In addition, under Section 9 of the Ordinance, the following regulations were imposed:

1. Crawfish. Minimum cape length 3⅛ inches. Closed season, March 14 to July 14. Taking of crawfish in spawn or molting prohibited.
2. Scale fish. Minimum mesh diameter of nets or traps fixed at 1½ inches if such nets or traps are constructed of twine; at 2 inches if constructed of material other than twine. Capture of scale fish in excessive varieties or quantities prohibited. Use of nets or traps within one-half mile of inhabited localities prohibited.
3. Turtle. Closed season, June 1 to August 31. Capture on-shore or within 100 yards of shore prohibited. Minimum size, green turtle, 30 pounds; hawksbill, 50 pounds; loggerhead, 20 pounds.
4. Fish exporters must keep records for delivery to Collector of Customs.

Canada

AUTHORITY OBTAINED FOR INSPECTION OF EAST COAST CANNED FISH: By amendments to the Regulations Governing the Inspection of Canned Fish and Shellfish and the Operations of Canneries, under the authority of the Meat and Canned Foods Act, the Canadian Department of Fisheries has obtained authority to enforce compulsory inspection of canned fish and shellfish in Quebec, New Brunswick, Nova Scotia, and Prince Edward Island, according to the Canadian periodical Foreign Trade of October 2.

The regulations establish higher standards of operation to be met by canneries before they are allowed to operate, higher standards for products for which grades already have been established, and new standards for canned products not previously graded.

British Columbia canned salmon and canned herring have been subject to compulsory inspection for some time.

Denmark

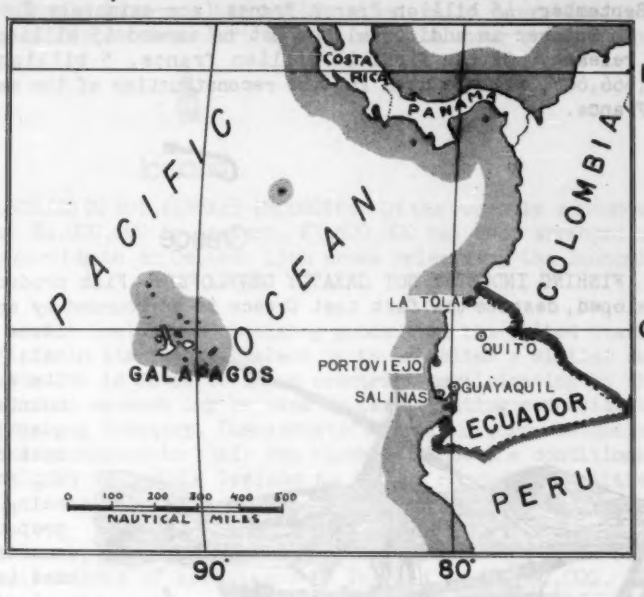
CHANGES IN FISHERIES LAWS CONTEMPLATED: The Ministry of Fisheries of Denmark is considering measures for the development of the fisheries, quality control of fishery products, and changes in the method of sale of fish, as well as changes in the nature of subsidies for construction of fishing craft, according to an address by the Prime Minister at the opening of the Rigsdag on October 5, 1948, as reported by the American Embassy at Copenhagen. In addition, the Prime Minister stated that the existing provisional fisheries laws will be extended with minor revisions because of the fact that the committee considering new fishery legislation will be unable to submit its findings until the autumn of 1949.

Ecuador

GRANTS FISHING CONCESSIONS TO FRENCH COMPANY: Authorization to sign a contract between the Ecuadorean Government and a French company, granting the company fishing rights, concessions, and permission to establish a cannery in the Galapagos, was given by an Executive Decree, according to press reports received from Ecuador the latter part of September.

In Registro Oficial No. 281 dated August 25, 1948, the Ecuadorean Government issued Executive Decree No. 1574 dated August 24, 1948, authorizing the Ministers of Defense and Economy to sign a contract with a French company which is to begin fishing and cannery operations within three months following its establishment in Ecuador. The Decree grants the French company, and an Ecuadorean company, which will be established at a later date, the right to fish in the territorial waters of Galapagos and specifically in the Archipelago of Colon. Likewise, these companies are granted the right of establishing installations, factories, refrigeration stations, plants to extract the byproducts and derivatives, and, in general, all other installations necessary to develop the industry on the mainland or in the Galapagos in the manner provided in the contract. It is intended to set forth

the rights of exploitation for the Ecuadorean company as soon as it is established. The concession to the French company is to run for a period of twenty years and on its expiration will be renewable for equal periods. In addition, the French company is granted additional unspecified rights to exploitation of natural resources based on future contracts. The concessions granted in the present contract do not affect the right which the Government of Ecuador holds to grant equal exemptions and benefits to any other analogous industry which may be established.



The company will enjoy the usual rights of new industries and others in Ecuador, including the free use of territorial waters, access to the national ports, use of specific zones belonging to Ecuador, freedom from custom duties and consular duties, and other additional duties. However, in exchange, the company will be subject to the payment of taxes of a general character which may now be in force and which may hereafter be created, and will be permitted to export only surplus production.

It is further specified that the company is obligated to submit to Ecuador its program of industrial activities; maintain in the company a permanent representative of the Ecuadorean Government to supervise the progress, development and accomplishment of the industrial works and the business of the company; to sell in the Ecuadorean market all its industrial and manufactured products at prices to be fixed by the Ministry of Economy after a reasonable and equitable profit for the company; not to export its products if the necessities of internal consumption have not been satisfied; establish refrigeration stations in the principal centers of distribution; grant participation in the profits of the company to the employees and workers in the manner and amount determined by law; collaborate strictly with the official Ecuadorean services in order to protect and conserve the source of natural wealth; establish courses of training for study in the industrial branches of fishing, refrigeration and canning; employ Ecuadorean workers in the various branches of its activities, with the exception of technical personnel which may be foreign and which may enter the country under the auspices of the company; to establish an Ecuadorean company in Ecuador within three months of the signing of the contract between Ecuador and the French company; and other restrictions.

France

ECA COUNTERPART FUNDS FOR FISHING FLEET: Detailed plans to increase France's productive capacity with the use of 45 billion francs of the French counterpart fund were announced on October 4, 1948, by the Economic Cooperation Administrator. In September, 45 billion French francs (approximately $150,000,000) were released and in October an additional sum not to exceed 45 billion francs is contemplated for release. Of the first 45 billion francs, 5 billion francs, approximately $16,666,666, will be used for the reconstruction of the merchant and fishing fleet of France.

Greece

FISHING INDUSTRY NOT GREATLY DEVELOPED: Fish production has not been fully developed, despite the fact that Greece is surrounded by sea, according to October 2 issue of the Canadian periodical, Foreign Trade. Before the war, fish production amounted to 25,000 tons. This quantity barely covered 50 percent of the requirements of the population, the balance being imported as fresh and prepared fish, costing the country some 600 million drachmae (about $6,000,000).

GREEK FISHING BOAT

Before the war, fishing operated by primitive means along Greek coasts, in some cases by destructive methods. The boats and fishing vessels used were poor and of small tonnage. The situation grew worse during the war. UNRRA and the British ML Mission supplied motorized fishing vessels, fuel, and thread for net making. The Agricultural Bank of Greece provided some 70 million drachmae ($7,000) to adapt these vessels to Greek conditions. The Ministry of National Economy signed an agreement with the Agricultural Bank of Greece for 43,000 million drachmae (about $4,300,000) for the rehabilitation of fishing, 23,000 million (about $2,300,000) of which were for the supply of fishing equipment and lumber for the making of fishing craft.

* * * * *

FISHERIES EXPANSION PLANNED: Progress in the field of food processing and refrigeration will do much to increase food available to the population of Greece and for export, according to the Fourth Report to Congress on Assistance to Greece and Turkey for the period ended June 30, 1948, recently issued by the Department of State. A plan to provide loans to farmer's cooperatives, private companies, and individuals through the Agricultural Bank of Greece is now in full operation for projects involving rebuilding and expansion of cold storage for agricultural products, fishing, refrigeration and transportation, rendering plant, etc.

Technical advice which should lead to increased production has been furnished to the Greek Government, and it is hoped that reorganization of the administrative services furnished to the fisheries by the Government will also improve conditions in this industry. Twelve modern fishing vessels contributed by UNRRA and equipment intended to modernize existing craft had not been put into service when the Mission's work began. These vessels have now been sold, nine are in operation, and the others are being equipped for service. Further equipment is under procurement.

Iceland

ECA PARTICIPATING COUNTRIES TO BUY FISHERY PRODUCTS: Of the recently announced fourth quarter allotment of $4,000,000 to Iceland, $3,500,000 has been arranged as a conditional allotment, according to an October 15th press release by the Economic Cooperation Administration.

The $3,500,000 is to assist Iceland in obtaining goods from the United States with whom Iceland has a deficit in its trade. Iceland is to establish a similar sum of its own currency in an account in favor of other countries participating in the European Recovery Program. This account may be used by participating countries to buy products of Iceland's fishing industry. These countries will, in turn, establish an amount comparable to their purchases in their own currency. Thus the conditional allotment to Iceland is designed to enable Iceland to obtain needed commodities from the United States and at the same time foster intra-European trade.

The fourth quarter allotment, plus a $2,300,000 loan agreement in the April-June quarter, brings the total allotments of assistance to Iceland to $6,300,000. It has not received any grants-in-aid.

* * * * *

EIGHT MORE TRAWLERS ORDERED: The Icelandic Government has placed and signed an order for eight large vessels at Aberdeen, Scotland, according to the English periodical, Fish Trades Gazette of October 16, 1948. The trawlers are each to be 183 ft. 6 in. in length, have a motor of 1200 h.p., and an estimated speed of 13 knots. Each vessel's fish hold will have a capacity of 840,000 pounds. The vessels are to be fitted with the most modern navigational equipment, including wireless telephones, direction finders, depth-sounding apparatus, and radar. Accommodation for the crews will incorporate the most modern ideas yet introduced into trawlers.

A member of the Icelandic Parliament stated that this was the second largest contract they had signed in Great Britain. The first contract, signed in October 1945, was for 30 trawlers, of which 28 have been delivered. One of the Icelandic vessels has broken the world's record for catch, securing 380 tons in seven days.

Korea

FISHERIES DEVELOPMENT RECOMMENDED: The waters surrounding the Korean peninsula contain rich fishing grounds that have favored the development of a valuable marine products industry, according to a report entitled, Korea 1945-1948, recently issued

by the Department of State. At the beginning of World War II, Korea's output of marine products ranked sixth in the world. Nearly half a million people found employment in the fisheries. In the late 1930's, the annual catch reached almost 2 million tons. Fully half of the catch, however, was of sardines, which by 1939 had moved from their schooling areas off the Korean east coast. At present, shortages of fishing boats and gear, preservation and refrigeration facilities, and processing plants and canneries have impeded the resumption of fishing on the prewar scale. Although many of the best fishing grounds are north of the 38° parallel and, therefore, inaccessible to south Korean fishing fleets, those below the 38° parallel offer excellent opportunities for rehabilitation of the fishing industry.

A restoration of fishing, preservation, and processing equipment would assure the south Korean economy of a valuable source of foodstuffs and an important export commodity. Marine products such as agar-agar, seaweed, fish, and fish oil are today among the few important south Korean export items. Expansion of the marine products industry is of primary importance for the recovery of south Korea's economy.

Mexico

LIMITS FISHING PERMITS: The following is an excerpt from a translation of a Decree from the Diario Oficial, Mexico, D. F., dated September 29, 1948, regulating the term of duration of "Via la Pesca" documents.

DECREE fixing maximum time limits for "Via la Pesca" clearances issued to vessels of foreign registry.

ARTICLE 1. The time limit for "Via la Pesca" clearances shall be fixed on the basis of net tonnage capacity of the applicant vessels of foreign registry. For such purposes, the following table of maximum time limits for those clearances shall be observed in all instances:

Net Registered Tonnage	Maximum Time Limit for Clearance
Up to 3 tons	10 days
Over 3 and up to 15 tons	25 "
Over 15 and up to 70 tons	50 "
Over 70 and up to 200 tons	70 "
200 tons and over	90 "

ARTICLE 2. Captains of the vessels in question shall return the used "Via la Pesca" clearances to the Fishery Inspectors assigned to the ports at which the vessels were unloaded, within the time limits fixed in the foregoing article. Failure to comply with this obligation shall be cause for the permit holder under whose authorization the captain operates to be liable to monetary penalties of up to $10,000.00, depending upon the circumstances in each individual case, in accordance with the pertinent paragraphs of articles 60 and 64 of the Fishery Law, without prejudice to imposition, when such is in order, of the penalty provided in article 62 of this law. In addition, the individual directly responsible for the violation shall also be penalized, as provided in article 51 of the law.

ARTICLE 3. In accordance with article 59 of the law (Fishery Law of December 31, 1947) cited, imposition of such penalties is the responsibility

of the Ministry of Marine, through the Directorate General of Fisheries and Allied Industries.

TRANSITORY ARTICLE:

SOLE ARTICLE. This Decree shall enter into effect ten days after its publication in the Diario Oficial of the Federation.

Newfoundland

FISH OILS, 1947: Introduction and Summary: Newfoundland's production and export of fish oils in 1947 were confined, as usual, to the following principal types, in the order of importance: Whale oil, common cod oil, seal oil, refined cod liver oil, and herring oil, according to the American Consulate at St. John's.

The highlights of the 1947 season were as follows:

1. Whale oil production exceeded that of the record-breaking 1946 season, while exports of whale and sperm oils for the first time exceeded the million gallon mark; Newfoundland must now be ranked as an important producer and exporter of whale oils, and international negotiations on the subject may be expected to take this recent development into consideration.

2. Common cod oils again commanded extremely high prices, and production registered a 20% gain over 1946.

3. The once highly important, but recently dormant, seal fishery showed an accelerated rate of revival, with exports of seal oil more than trebling those for 1946.

4. Refined cod liver oil exporters remained uncertain of their position, inasmuch as common cod oil prices influenced fishermen to turn towards that commodity rather than sell their cod livers to refining factories.

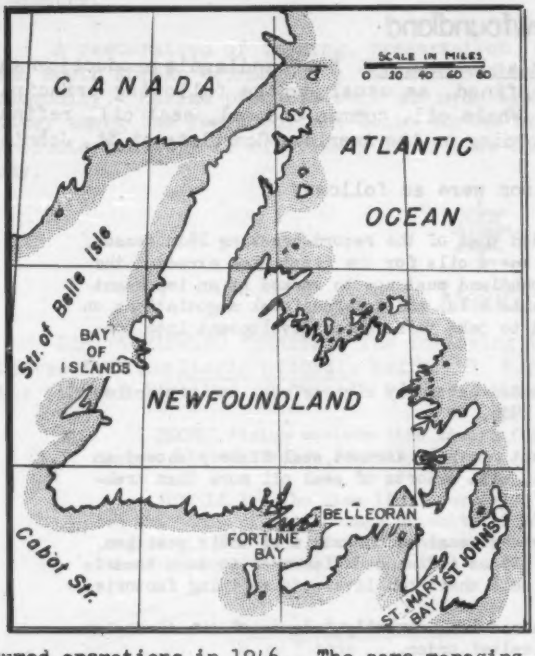
5. Herring oil production remained low primarily because of the diversion of herring to fill a large relief order.

Production: Cod Oils: The production of cod oils is ultimately dependent upon the production of cod. In 1947, the total production of cod was 137,236,403 pounds (128,800,000 pounds salted and 8,436,403 pounds fillet), compared with 138,823,812 pounds (110,604,256 pounds salted and 28,219,556 pounds of fillets) in 1946.

Production of cod liver oil in Newfoundland is limited by the lack of a large home market and by a low vitamin D content. An additional important limiting factor is the small supply of oil due to the methods of production. While in other countries, liver oil is produced on board trawlers and later refined, in Newfoundland this has not been possible owing to the small size of schooners used (rarely above 200 tons and for the most part less than 100 tons). Consequently, cod liver oil factories in Newfoundland depend strictly on reliable supplies of shore cod, brought to shore as early as possible after the catching—practically within a few hours. Newfoundland's cod liver oil industry is thus run in conjunction almost entirely with the shore fishery, and factories are located in the coastal areas in which the shore fishing is best and most dependable.

The export market price of refined oil has been an important factor in determining the production each season of refined cod liver oil (medicinal) produced in relation to the amount of common cod oil produced (largely for tanners). In 1947, while cod liver oil prices were at satisfactorily high levels, the price of common cod oil was relatively so much higher that the ratio of refined oil produced fell off as compared with 1946.

In 1947, 415,622 gallons of cod liver oil were exported as compared with 505,680 gallons in 1946. Exports of common cod oil for 1947 stood at 714,799 gallons, compared with 599,030 gallons in 1946. Production of refined cod liver oil fell off by more than 20 percent as compared with 1946, while production of common cod oil increased by about 20 percent. As was the case in 1946, the production of common cod oil was wholly insufficient to meet the demand, and export prices remained at high levels reached when ceiling prices in the United States were removed late in 1946.



Herring Oil: Two factories only are responsible for Newfoundland's herring meal and herring oil production. Both were erected in 1941 and commenced operations in 1942. The factory at Bay of Islands has normally been responsible for the greater part of Newfoundland's production and export of herring oil. In September 1944, however, this factory was destroyed by fire. As a result, exports of herring oil fell off from over 480,000 gallons in 1944 to little more than 24,000 gallons in 1945. However, the factory was quickly rebuilt, and resumed operations in 1946. The same managing interests also built a new plant at Belleoram, Fortune Bay. This was completed in 1946, but has not as yet come into production owing to inability to obtain necessary machinery.

Production of herring oil in 1947 remained low principally owing to the following two factors:

1. Large UNRRA orders for herring diverted herring from the oil processing plants.
2. Herring failed to strike against the Labrador coast.

Whale and Sperm Oil: The whaling industry has been prosecuted much more intensely in recent years than before the war. Six boats operated in 1947, compared with the same number during 1945 and 1946, four in 1944, three in 1943, and only one for each of the three prior years. Two companies were responsible for Newfoundland's exports of whale oils in 1947, as in 1945 and 1946.

A concern plans to build a new whaling plant in St. Mary's Bay, Southern Newfoundland, where whales may be found during November-May. If successful, this would make whaling a year-around industry.

The 1947 season was highly satisfactory. The total catch of whales was the second highest in recent years: 455 as compared with the record of 529 caught in 1946. The production of whale oil, however, reached a record level of 927,343 gallons, compared with 913,139 gallons in 1946. A portion of the whale oil consisted of sperm oil--61,235 gallons in 1947, as compared with 31,182 gallons in 1946.

The catch of whales would have been higher in 1947 had it not been for the extremely bad weather which hampered operations. There was no scarcity of whales.

Seal Oil: Newfoundland's seal fishery, during recent years, has partially regained the important role which it once played in Newfoundland's economy. Before and during the war, the seal fishery all but disappeared. Since the war, the seal fishery has been prosecuted with increasing vigor, auxiliary motor vessels being responsible for the greater part of the catch, rather than steamers as in earlier years.

The 1947 seal fishery for Newfoundland was about three times as successful as the 1946 season. During 1947, a total of 97,535 seals were caught, valued at $350,974.33, compared with the 1946 catch of 34,241 seals valued at $119,993. Seventeen vessels prosecuted the seal fishery during 1947, compared with 12 in 1946. Two of the vessels were steamers, while the remainder were motor vessels of various sizes.

Seal oil production in 1947 stood at about 480,000 gallons, compared with 155,870 gallons in 1946. During the 5-year period 1935-39, production of seal oil amounted to over 3,600,000 gallons, an average of over 720,000 gallons per year. Production during 1942-44 stood at less than one-tenth this figure, while production in 1947 amounted to two-thirds of the annual average during 1935-39. This marked increase reflects the degree of success with which auxiliary and motor vessels have met in prosecuting the seal fishery--and the highly satisfactory prices which seal oils are obtaining.

Consumption: Virtually the entire production of fish oils in Newfoundland is exported, the volume of home consumption being unimportant.

Exports: As was the case in 1946, the greater part of common cod oil exports went to the United States in 1947, by allocation. Similarly, most of the cod liver oil (medicinal) went to the United States, although not by allocation.

Exports of whale oil nearly doubled, as they had the year before, Canada taking almost the entire amount by allocation. Some relatively new markets opened up in 1946--Finland, Netherlands, and Czechoslovakia--were at least momentarily lost in 1947. Sperm oil exports fell slightly below 1946 levels, nearly all exports going to Canada by allocation.

Exports of seal oil more than trebled, reflecting the partial revival of the once important seal fishery. Canada was by far the largest market, by allocation.

Table 1 - Exports of Fish Oils from Newfoundland

Type of Fish Oil	1947		1946	
	Gals.	Value	Gals.	Value
Common Cod Oil	714,799	$1,015,595	599,030	$605,396
Refined Cod Liver Oil	415,622	796,466	505,680	957,911
Poultry Oil	5,633	11,680	4,847	6,546
Whale Oil	1,153,568	1,595,907	745,948	723,770
Sperm Oil	61,422	98,187	67,489	86,087
Seal Oil	498,247	761,207	158,122	148,946
Herring Oil	42,299	61,703	5,742	6,210
Dogfish Oil	-	-	58	72
Bream Oil	1,488	1,141	-	-
Total	2,893,078	$4,341,886	2,086,916	$2,534,938

Herring oil exports showed a substantial increase over the very low 1946 figure, but failed to approach the 1944 figure of more than 480,000 gallons. UNRRA orders accounted for most of the herring (which might otherwise have been sold to the oil processing plant), and in addition, the herring fishery was not as successful as in previous years.

With the exception of cod liver oil, fish oil exports were governed largely by international marketing arrangements.

Stocks: Stocks of common cod oil and cod liver oil at the end of 1947 were very low, as was the case in 1946. Herring oil stocks were likewise low. Stocks of whale and sperm oils were low, and stocks of seal oil were negligible.

Although production of common cod oil reached a level approximating that of prewar years, stocks were low owing to the steady demand for the product and to the very high prices obtained for such oil. Cod liver oil exporters also found ready markets at remunerative prices for the relatively small amount produced.

In the case of herring oil, production did not approach the high level established in 1944, even though some of the ground lost in 1945 and 1946 was regained. The comparatively small amount produced during the past three years has found a ready market at good prices, mainly in the United States.

The steady demand for whale and sperm oils, at very high prices, had made it possible to market such fish oils readily, reducing stocks to purely nominal figures. Sales have been very easy for these types of oils. Seal oil, too, has been marketed at extremely high prices, cutting stocks to a negligible figure.

Prices: Fish oil prices have been influenced and, in many instances, governed by international allocations and by price fixing.

Import restriction initiated by many countries during the early years of the war dislocated Newfoundland's fish oil trade, and for a while considerable difficulty was experienced in marketing the production. For a time, in 1945 and 1946, ceiling prices in the United States were the determining factor. With the removal of ceiling prices in the United States, prices were determined, for the first time in years, by normal factors of supply and demand. In 1945, common cod oil exports to the United States were priced at 78-85 cents a gallon, c.i.f., United States currency, but commanded considerably higher prices early in 1946. With the removal of price

controls late in 1946, the price jumped to over $1.60 a gallon, c.i.f., United States currency--more than double the price in 1945, and probably 500 percent or more above prewar prices. (All prices quoted are average prices for average quality unless otherwise stated.)

The sale of cod liver oil, unlike common cod oil, has never been channelled through government corporations; sales have been made direct to private buyers. During 1947, refiners paid fishermen an average of $1.41 a gallon, Canadian currency, slightly below the 1946 level. Exports of cod liver oil to the United States were priced at $1.85-2.05 a gallon, c.i.f., United States currency. Top-grade (non-freezing) cod liver oil sold in 1947 for about $2.65 a gallon, c.i.f., United States currency, well above 1946 levels.

During the past three years, whale, seal, and herring oils have about doubled in price. Whale oil averaged $1.33 a gallon, Canadian currency, f.o.b., Newfoundland shipping point; a considerable amount of high grade whale oil sold for $1.50 a gallon. This compares with 63 cents a gallon in 1945. Seal oil in 1947 sold for $1.25 a gallon, Canadian currency, f.o.b., St. John's. A large quantity of low-grade seal oil sold in 1944 for 75 cents a gallon. In 1945, average grade seal oil brought 70-75 cents a gallon. Herring oil sold in 1947 for $1.25 a gallon, Canadian currency, f.o.b., St. John's, nearly twice the 1945 price for a similar grade.

Marketing: The marketing of common cod oil up to May 1944 was effected through the Commodity Price Stabilization Corporation, Ltd., in the United States and Canada. In May 1944, this arrangement expired, and exporters were left free to make their own sales, but at fixed prices. In 1945, restrictions with respect to minimum prices were lifted, and sales became entirely a matter of negotiation between buyers and sellers. In 1945 and 1946, the Oils and Fats Committee of the Combined Food Board allocated 200 metric tons of common cod oil to Canada, the balance going to the United States. In 1947, the IEFC allocated 1,500 metric tons to the United States, 400 to Canada, and 100 to sundry markets.1/

The sale of cod liver oil (medicinal) has never been subject to the same arrangements as common cod oil.

On the recommendation of the International Emergency Food Council, it was agreed by the Newfoundland Fisheries Board, after consultation with the trade, that Newfoundland's 1947 production of whale and seal oils should be allocated to Canada--as was the case in 1946. Herring oil of 1947 production, however, was not allocated to the United States, as in 1945 and 1946. Herring oil was allocated to Canada (i.e., herring oil of the 1947-48 producing season, June 1st to May 30th).

Based on the opinions of the exporters, Newfoundland seal oil is used primarily by tanneries (in the case of lower grade oils) and manufacturers of confectionaries. Herring oils are used largely in paints and varnishes. Whale oils are used in margarine and soap manufacturing. Cod liver oil, of course, is used medicinally, while common cod oils are used largely by tanneries.

1/ One ton equals 307 gallons. Allocations are made by production seasons beginning June 1 and ending the following May 30th.

Norway

ECA FUNDS AID FISHERIES: Fish will be served on many European dinner tables this year, according to the Economic Cooperation Administration mission in Norway. This fish would have remained out of intra-European trade had not ECA made possible the catching of it.

Without cotton, there would be no new nets for weather-beaten Norwegian herring and cod fishermen. Norway turned to the ECA for assistance on cotton imports from the United States. Approximately 350 tons of American raw cotton amounting to about one-half of the $700,000 authorized for cotton imports were earmarked for fish nets.

The U.S. cotton for the nets was delivered to Italy, where it could be converted into yarn at a Milan factory. When the yarn was delivered to Norway, it was woven into nets in factories now rehabilitated by the purchase of ECA equipment. As a result of the new nets and larger catch, Europe will be eating more fish and Norway's export trade with almost every country in Europe is expected to reach it's prewar $100,000,000 annual level.

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FIND NEW ARCTIC FISHING BANK: A new hunting ground for Greenland sharks, a source of medicinal liver oil, has been discovered by fishermen from Aalesund, Norway, recently returned from a 4-month expedition north of the 76th parallel, according to the Royal Norwegian Information Service. Operating two deep-sea fishing craft, the men reported a successful season in these new waters and had aboard some 800 barrels of shark liver oil. The new field is said to lie off northwestern Greenland south of Ellesmere Island. The two boats arrived at the edge of the ice in early June and fished until September in front of the receding ice line north to Ellesmere Island. Radio telephone communication between the boats made it possible to plot the course of the fish schools.

The Greenland shark is hunted only for its liver. Once the liver is removed, the fish is dropped overboard, and the oil is extracted by a steam process aboard the vessel.

FOUR-YEAR RECOVERY PROGRAM: The Norwegian 4-year investment and recovery program to be carried out from 1949 to 1952 and presented to the European Branch of the Economic Cooperation Administration includes a program for the expansion and modernization of Norway's fishing and fish packing industry. This plan envisages an increase of 1.3 million metric tons (about 2,900 million pounds) in the fish catch, or 40 percent more than before the war; the building of 64 new freezers; the construction of 50 plants with wharves; increase in the output of herring meal from a present 110,000 tons to 135,000 tons and fish meal from 10,000 to 25,000 tons; and an increase in the production of canned fish from 46,000 to 100,000 tons. Whale oil production is slated to remain at the current level--180,000 metric tons.

SEALING: Sealing vessels have brought back to Norway this season 167,000 seal skins and 3,700 metric tons of blubber valued at $3,800,000.

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COD LIVER OIL INDUSTRY: Production: During 1947, the catch of cod was exceedingly large, and the production of unrefined, steamed, cod liver oil for all of

Norway amounted to about 2,905,925 gallons, according to a report from the American Consulate at Bergen. The production of trawler cod liver oil and oil from coalfish was about 396,263 gallons during that year. The production during the 1948 season was the smallest for many years with the possible exception of the period of German occupation when, because of mines and other reasons, the catch was exceptionally small. It is believed that the production this year will fall far short of the demand.

The production figures given in Table 1 include only the production during the season from January 1 to June 29. During the rest of the year, sporadic fishing continues, and it is estimated that the figures should be increased from 30 to 40 percent to cover the entire yearly production.

Table 1 - Production of Cod and Cod Liver Oils, January 1-June 19

Jan.1 - June 19	Production of Cod (All Norway)	Production of Cod Liver Oils		
		Steam Refined	Other	Total
	Metric tons	gals.	gals.	gals.
1948	133,712	1,467,624	109,606	1,577,230
1947	229,002	2,924,734	129,684	3,054,418
1946	182,070	2,639,372	96,662	2,736,034
1939	211,247	2,420,847	125,087	2,545,934

About 85 percent of the cod liver oil for medicinal purposes produced in Norway is derived from the liver of the cod (Gadus morrhua), but the liver of other fish such as coalfish (pollock) and haddock are also used. The oil exported from Norway is strictly controlled; only oil from the cod, coalfish, and haddock may be used for medicinal purposes. The highest quality oil exported under Control Standard "A" is that derived only from the cod, and is sealed with a yellow seal. This forms the largest part of cod liver oil produced for medicinal purposes. Other steam-rendered cod liver oil or oil prepared from the livers of mixed Gadus species is sealed with a white seal, and raw medicinal cod liver oil with a blue seal.

Norwegian scientists have given a pessimistic picture of future cod catches. However, it is believed by some experts that the catch could be increased by the introduction of more scientific methods. The modernization of the cod fishing has not kept pace with that in other branches of the fishing industry of Norway. It is understood that both the cod fishermen and the Government are opposed to modernization as this would give too much advantage to the large fishing companies at the expense of the small individual fishermen.

Stocks on Hand: At the end of the war, stocks of medicinal cod liver oil amounted to approximately 1,321,000 to 1,585,000 gallons. However, during 1946, the demand for cod liver oil in many countries was so great and such large quantities were exported that the stocks were exhausted by the end of the year. During 1947, exports continued in large volume and, in spite of the large catch in that year, the quantity of cod liver oil produced in Norway was not sufficient to meet the great demand from all countries. The stocks were again exhausted by the autumn of that year. The small production this year will not be sufficient to meet the continuing heavy demand and the stocks will again be exhausted.

Price: According to quotations from Pristidende, official weekly publication of the Norwegian Price Control Office, Oslo, Norway, No. 2 dated January 20, 1948, the market price of medicinal cod liver oil is as follows:

Table 2 - Cod Liver Oil Prices

Product	Grade		
	First barrel[1]	Second barrel[1]	Third barrel[1]
Steamed medicinal cod liver oil:			
Finmark	$35.21	$33.40	$31.79
Other parts of Norway	36.22	34.41	32.60
Raw medicinal cod liver oil	35.21	-	-
Pale raw medicinal cod liver oil	32.19	-	-

1/ 30 U.S. gallons per barrel.

The above prices are delivered, inclusive of packing, f.o.b. at the seller's nearest place for delivery on board ship or rail. In case the product is to be delivered at a place involving extra transport expenses, the seller may add these to the price.

The product is packed in ordinary tin barrels, which take about 233 pounds or 30 U. S. gallons of cod liver oil. When the product is packed in any other packing, the prices should not be higher than the above, but less by $4.63 per barrel, plus the cost of the packing. The expenses for packing should not be higher than $6.84 per 30 gallons of cod liver oil when delivered in half barrels, and $3.42 per 30 gallons when delivered in casks or drums.

The prices are those fixed by the Norwegian Government for unrefined medicinal cod liver oil, f.o.b. producer's place of delivery, but do not represent the prices to the ultimate foreign purchaser. According to the latest figures, the fixed price for prime quality, steam-rendered, unrefined Lofoten cod liver oil is about $36.22 per barrel, f.o.b. place of production. The price which the exporter receives for Lofoten medicinal cod liver oil, refined and uncongealable is about $43.26 per barrel, f.o.b. port of embarkation. This includes cost of oil, cost of refining, plus inland freight, handling charges, profits, etc. The minimum price at which this cod liver oil can be sold is $64.39 c.i.f. foreign port. The actual price at which this cod liver oil is sold at the present time is about $80.48. The difference between this price and the export price, plus ocean freight, insurance, etc. is paid to the Government, and is understood to be used by the Government for stabilization of prices, assistance to fishermen, and to the fishing industry.

Exports: The following quantities of medicinal cod liver oil (steam-rendered and destearinated) and raw cod liver oil were exported from Norway during the period 1938-39 and 1945-47:

Table 3 - Total Exports of Cod Liver Oil

Cod Liver Oil	1947 (Jan.-Sept.)	1946	1945	1939	1938
	gals.	gals.	gals.	gals.	gals.
Medicinal	1,981,500	3,804,480	369,880	3,410,822	2,364,590
Raw medicinal	2,272	48,639	2,985	142,668	126,816

Table 4 - Export Values of Medicinal Cod Liver Oil

1947	1946	1939	1938	1937
$11,028,109	$8,555,106	$2,163,802	$1,435,794	$1,779,575

About 72 percent of the cod liver oil exported from Norway during 1947 was shipped by firms located in Bergen.

Table 5 - Exports of Various Types of Liver Oils

Product	1947		1946	
	gals.	value	gals.	value
Cod liver oil:				
Steamed medicinal	2,592,481		2,796,187	
Raw medicinal	2,271		48,635	
Pale	2,375,408		1,514,462	
Light brown industrial	482,568		674,175	
Brown industrial	12,548		17,356	
Total cod liver oil	5,465,276	$11,028,109	5,050,815	$8,555,106
Greenland shark oil	159,840		109,448	
Seal oil	444,570		207,192	

Outlook: The outlook for future orders for Norwegian cod liver oil is uncertain. Up to the present time, there has been a market for the entire production of Norway and, because of the limited production this year, the production will

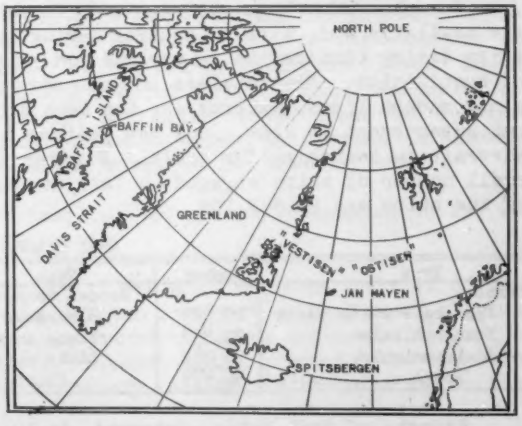
Table 6 - Leading Importers of Norwegian Medicinal Cod Liver Oil

Country	1947	1946
	gals.	gals.
United States	353,545	350,956
Belgium	96,635	66,097
Bulgaria	79,781	14,424
China	86,808	15,560
Czechoslovakia	571,701	307,685
France	163,736	101,073
Italy	229,991	178,846
Netherlands	175,307	214,061
Poland	267,319	122,551
Sweden	409,286	352,330
U.S.S.R.	-	414,279

fall well below the demand. In recent years, the increase in production of cod liver oil from Iceland has caused keen competition for Norwegian cod liver oil.

* * * * *

SEALING INDUSTRY IMPORTANT FACTOR IN ECONOMY: Sealing operations have been carried out by Norwegians on a limited scale and sporadically since pre-medieval times, according to the Canadian periodical, Foreign Trade. This industry was not important until the beginning of the nineteenth century, when a number of Norwegian sealers put out from the north and northwest coasts and cruised from Greenland and Jan Mayen Island to the far north in the neighborhood of Spitsbergen, and into the White Sea.

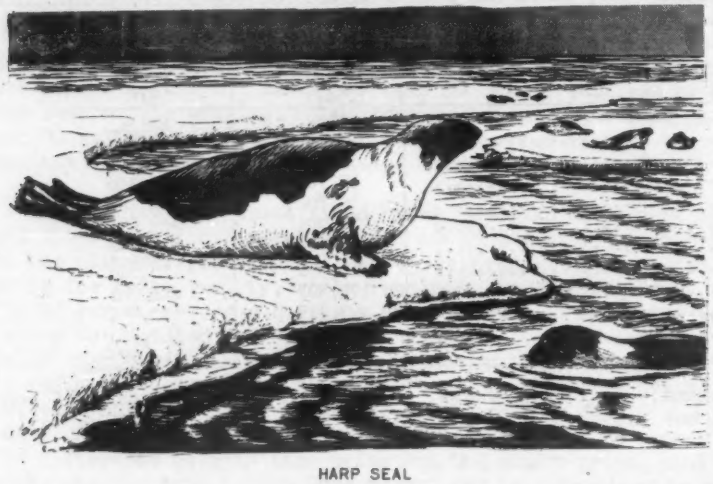


For the past hundred years, the principal fishing areas have been to the east and west of Jan Mayen Island, extending northward, and are known as "Ostisen" and "Vestisen" respectively. Sealing is also carried on in the Davis Straits between Greenland and Baffinland, as well as in other concession areas,

and, to a more limited extent than in former times, in the White Sea, where sealing was allowed under an agreement with Russia.

Harp Seal is Principal Type Taken: The main type taken is the harp seal, and nearly all caught in the "Ostisen" area are in this category. The 1925 catch from this area totaled 343,040 animals, of which 99 percent were harp seals. Numbers of hooded seal are, to a limited extent, found in this area but are mainly taken in the western area. It has been estimated that, during the 15-year period 1924-39, 61 percent of the catch from "Vestisen" was hooded seal, the remainder being harp seal.

As many as 169 Norwegian vessels have been engaged in one area, but vessels often operate in both the "Ostisen" and "Vestisen" areas in one season. Statistics are not available for the period 1939 to 1947, but it is extimated that in the latter year about 16 ships comprised the fleet operating in both areas, making a total of 58 trips in all.



HARP SEAL

Most of the seals give birth to their young between February 20 and March 5, and as the so-called white coats are the more valuable prize, hunting begins in late February or early March and continues until the middle of July. Usually, two trips are made by the ships in a season.

Annual catches have varied greatly in volume over the years for which statistics are available and, with no hunting during the war years and a considerable loss of ships during that period, no serious hunting has been carried out since the cessation of hostilities. Nevertheless, efforts were made in 1947 to organize the industry along modern lines, and progress has been made in obtaining new ships and equipment but advancement is slow. One new feature introduced since the war is the use of aircraft in searching for seals. Figures for 1947 indicate that even with the small number of ships engaged, a fair average catch resulted and the total value of the skins was $1,572,103.

Seal Catch, 1947

Type	Number	Type	Number	Type	Number
Harps:		Hooded Seals:		Bearded Seals	516
Fast hair white coats	15,939	Bluebacks	23,991	Grand Total..	103,508
Young animals	22,958	Young animals	4,989		
Adult animals	18,082	Adult animals	17,033		
Total.....	56,979	Total.....	46,013		

Exports of seal skins, untanned, in 1946 and 1947 totaled 353,206 pounds and 295,394 pounds, respectively. Trade in both years was somewhat intermittent, exports

being available during eight months only of the former and nine months of the latter year. Skins of all types are considered by Norwegian exporters as being suitable not only for fur but also for tanning purposes.

The industry had anticipated a much better catch in 1946, after the long wartime period of inactivity in the areas, but was disappointed. However, the 1947 catch showed a decided improvement. From preliminary information received, it would appear that the 1948 season has started badly, and it is estimated that the catch will be lower than in 1946.

From observations made by Norwegian sealers and others engaged in the scientific study of the sealing industry in prewar years, there are two size groups of gray seal. One has skin weights which generally are grouped around 9 to 11 pounds, and the other around 15 to 18 pounds. The dividing line between these groups may be fixed at a skin weight of about 13 pounds. Although these specific comparisons cover the period prior to 1934, it is probable that they apply in the postwar period.

Higher Prices Expected in 1948: The Norwegian sealing industry generally measures the skins by weight: white coats, 5½ to 6½ pounds; bluebacks, 6½ to 8¾ pounds; saddlers, 17 pounds; and hooded seals, 22 pounds. In 1947, a majority of the fur skins sold in this country ranged in price as fcllows: white coats, $12.09-13.10; bluebacks and the larger skins, $16.12-17.13. Higher prices are anticipated for 1948. Export prices for the same classifications of skins, salted and cured, are $7.05-8.06, and $11.08-12.09, respectively. The tanners' skins are exported generally to the United States, where those used for fine leathers fetch $3, while blueback and larger skins are priced at about $2.

Oil Extracted in Herring Plants: Herring plants, particularly in the far north, are used for the extraction of the crude oil from the seal blubber. This oil is not refined, being exported in the crude state. The percentage of oil extracted from the blubber is 70 percent. All Norwegian seal oil is of one quality and color. It is medium pale with an acidity of 2 percent. In the past, the entire output has been sold in Europe and, as the volume produced is not sufficiently large to permit of the extension of sales beyond traditional markets, it is doubtful if any surplus will be available in 1948 for sale in North America. For the 1947 catch, Norwegian sealers received 19.7 cents per pound for blubber. After the extraction of the oil—and for the crude oil—the price to the exporter was 29.8 cents per pound. These prices apply to the oil derived from blubber landed by vessels returning from the first hunting trip in April and May. Following the second and final landing, in June and July, a slightly lower price was obtained as, with the warmer weather, the blubber becomes oxidized, and the oil is somewhat darker and poorer in quality. The price differential is, however, small.

Total exports of seal oil from Norway in 1946 and 1947 amounted to 207,212 gallons and 444,675 gallons, respectively.

Prospects for the Industry Unfavorable: The most important catches of seal have, since first they were recorded, been taken in the "Ostisen" area, although in many years, the "Vestisen" area may have produced larger catches. Sealing is also carried on between Greenland and Baffinland, but the catches in that area have not been recorded separately and are mainly included in the catches recorded for the "Vestisen" area.

The harp seal continues to be the main catch of the Norwegian fleet, as has been the case for many years. When the war was over, the industry was unprepared to take up where it had left off in 1940, due to losses of ships and equipment and to untrained personnel, and the prospects for 1948 are still unfavorable.

Republic of Panama

BAIT FISH PERMITS DISCONTINUED FOR CERTAIN PERIODS: The Ministry of Agriculture, Commerce, and Industries of Panama discontinued the issuance of 8-day bait permits in accordance with Decree No. 408 of April 27, 1946, which provides that such permits are valid only for fishing during the period January 15 to April 15 and June 15 to September 30 each year, according to a November 19 report from the American Embassy at Panama City. The refusal to issue permits is also due to the National Assembly's desire to thoroughly investigate bait fishing in order to enact regulations for conservation of the fisheries resources. Issuance of permits will be resumed January 15.

Poland

CENTRAL TRADING ORGANIZATION OF FISH INDUSTRY: The Polish Government is establishing a Central Trading Organization of the Fish Industry, according to the American Embassy at Warsaw.

According to the terms of the order, this organization will plan and administer the purchase and sale of all fishery products both domestic and foreign. Subject to approval by the Minister of Industry and Commerce it will fix prices for fishery commodities. The administration will have headquarters at Warsaw.

FISH CONSUMPTION: Efforts have been made to increase the consumption of fish on the part of the Polish population, according to an October report. This program has been accentuated by the recent shortage of meats. The head of the Seafishing Department of the Ministry of Navigation stated that the prewar consumption of fish in Poland was 6 pounds per capita. This year's consumption will amount to 7 pounds and next year's consumption to 8 pounds per capita. It is hoped that the consumption will soon increase to 22 pounds per capita. The price of fish will be reduced. It is expected that carp will provide 50 percent of the total fish supply.

Fishing Fleet and Fishermen: The Polish fishing fleet consists of 247 cutters, 1,148 motor boats, and 33 trawlers. The catch this year, particularly on the high seas, was considered very satisfactory.

Attempts are being made to increase the number of fishermen in the "Recovered Territories." At the close of the war, only 900 fishermen remained in Poland. At the present time, the fishing population is estimated at 4,000.

USE COD SKINS FOR WOMEN'S FOOTWEAR: The Polish coastal labor cooperatives have begun the tanning of cod skin for use in the production of women's footwear,

according to press reports. It is said that tanned cod skin is similar to ordinary animal skin in texture and has the appearance of lizard skin.

Experiments are also being made in using the skin of sea catfish in the production of fancy goods such as handbags, portfolios, etc.

Republic of the Philippines

NEW MODEL FISHERIES VESSEL: The David Starr Jordan, the vessel which it is hoped will be the answer to the Philippine fishing vessel operators' problems, was in Manila Bay the early part of October undergoing final outfitting, according to the Administrator of the Philippine Fishery Program of the Service. This vessel, which is the newest addition to the American fishery exploratory fleet, was ready to start explorations and demonstrations by the end of October.

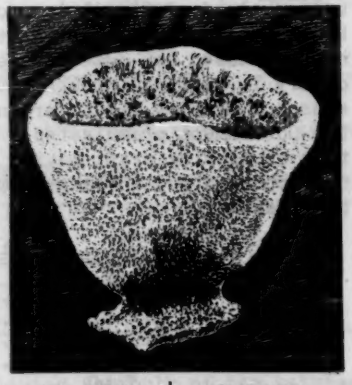
Equipped with modern machinery and the latest navigational and fishing equipment, the vessel can be used to demonstrate how to long-line or bait-fish for tuna, to otter trawl, and to fish seine and gill-nets. It has a fish hold with a capacity of 20 tons of iced fish.

The vessel has a gross tonnage of 30 tons, is 48.7 feet long, has a breadth of 13.6 feet and a depth of 6.8 feet. It is driven and powered by a 135 hp. diesel engine, and an 8 hp. engine for bait-tank pumps, a standby generator for batteries and a main generator driven from the main engine. Aside from the complete steering and engine room controls installed in the pilot house and on the flying bridge, there are also a 250-fathom range fathometer, a direction finder and a radiotelephone.

SAMPLES OF SPONGES SENT TO U. S. FOR APPRAISAL: Philippine elephant-ear sponges were sent to the Service at Washington, D. C., for more definite appraisal of the quality and value. The samples were obtained from Manila and it is stated that five to ten thousand pieces a month of this variety can be obtained.

From these samples, it will be possible to determine the average quality of Philippine sponges and the probable price they would command in the current market.

According to an experienced sponge producer now residing in Jolo, the elephant-ear sponge, one of eight known varieties in the Philippines, compares favorably in the market with the same type taken elsewhere. Elephant-ear sponges used to sell at $1.00 a pound before the war.



THE ELEPHANT'S-EAR SPONGE

Moro as well as Japanese divers were employed and it formerly took only three to four working days a week to gather enough sponges to fill one exporter's needs. With the reported growing interest of American sponge dealers in Philippine sponges, one producer is planning on reviving his old trade.

Difficulties in the exploitation of the sponge industry arise from lack of capital investment, irregularity of transportation and communication, and scarcity of supplies and equipment necessary for the gathering or diving for sponges, but it is expected that the prospect of a ready market and a good price coupled with modern methods in sponge processing, will eventually attract capital so that Philippine sponges may become a fair-sized export industry.

Siam

FISHERIES SURVEY: A 2-man mission has been sent to Siam by the Food and Agriculture Organization to make a rapid survey of the problems of the fishing industry in that country. One of the members of the commission is from the Division of Fisheries and the other from the Inland Fisheries Laboratory of the Indonesian Department of Agriculture and Fisheries. The mission will make a study of the inland and marine fisheries, and will pay particular attention to extension services for the development of fish culture, and the production of fresh-water, brackish, and marine fisheries, and problems of marketing and distribution.

The fisheries of Siam are relatively primitive and there appears to be much opportunity for development. The mission, however, will be able only to survey the problems and to furnish advice to the Siamese Government in working out a program for research and development.

Spain

SPANISH FISHING INDUSTRY, 1947: Fishing Fleet: The Asociacion de Industrias Pesqueras at Vigo, reported that the Spanish fishing fleet in 1947 totaled 37,832 units valued at 93 million dollars, according to the American Consulate at Vigo. However, in view of the greater abundance of meat and agricultural products which has decreased the domestic demand for fresh fish and since the fish canning industry is passing through a very difficult period, it is thought that Spain possesses a fishing fleet far in excess of its needs. It is probably for this reason the Government promulgated a decree on January 29, 1948, prohibiting the construction of fishing craft having a net tonnage of less than 150 tons. With the exception of about 15 large companies, the fleet is owned and operated by private individuals.

Table 1 - Composition of Fishing Fleet

Type	Number	Tonnage
Steam	1,181	87,134
Motor	6,642	88,249
Sail	12,847	36,955
Oars	17,162	21,547
Total	37,832	233,885

The larger tonnage ships are used for cod fishing off the banks of Greenland and Newfoundland and operate in the Cantabrican region which includes the northern coast in the Bay of Biscay, from the French border to the port of Luarca.

The value of the equipment of the fishing fleet which consists chiefly of nets, sinkers, auxiliary boats, floats, etc., is estimated at 25 million dollars.

The equipment of the Spanish fishing fleet is reported to be in a state of deterioration. In normal times, a large percentage of the equipment—cables, nets, ropes, hooks, bait, etc.—were imported from the United Kingdom and Norway, but owing to the self-sufficiency policy of the Spanish government and the shortage of foreign currency, the industry has been cut off from these sources of supply and has been compelled to revert to domestic substitutes which, in addition to being scarce and expensive, are of poor quality and require constant replacement, thus increasing further the high operation costs of the industry.

Catches: After almost ten years of progressive increases in the size of the catches, 1947 has seen a reduction in the amount of fish brought into port by the fishing fleet when compared with the corresponding figures for the previous twelve months. Prices, however, were higher than in the previous year.

The fishing campaign did not begin under very promising auspices, especially for the long range fishing fleet which makes its fishing ground the whole year round off the coast of Ireland and in the Gulf of Biscay. Stormy weather during the first part of the year caused the sinking of numerous units and rendered the fleet inactive for longer periods than in previous years.

In addition, the amount of the catches for this long-range craft, devoted to the fishing of hake, were much smaller, not only due to the non-appearance of fish but also to the presence in those waters of fishing craft of other countries, France, Norway, and the United Kingdom, which heretofore, due to war conditions, restricted their activities close to their home ports.

The abolition of ceiling prices and the higher prices obtained for fresh fish as a result of its scarcity, permitted the long-range fleet to operate profitably during the period under review.

Table 2 - Catches and First Sales Values, 1940-47

Year	Catch (In 1,000 lbs.) Lbs.	Value (In 1,000 $) U.S. $	Year	Catch (In 1,000 lbs.) Lbs.	Value (In 1,000 $) U.S. $
1947	1,249,251	185,575	1943	946,219	91,884
1946	1,307,413	156,708	1942	999,423	91,557
1945	1,195,579	114,600	1941	974,212	90,304
1944	1,018,744	95,455	1940	951,812	66,282

The composition of the catches, during the past two years, was as follows:

Table 3 - Composition and First Sales Values of Catches

Product	1947 (In 1,000 lbs.) Lbs.	1947 (In 1,000 $) U.S. $	1946 (In 1,000 lbs.) Lbs.	1946 (In 1,000 $) U.S. $
Fish	1,156,788	167,244	1,210,147	142,604
Crustaceans	40,779	9,686	40,124	7,430
Shellfish	51,682	8,645	57,141	6,674
Total	1,249,249	185,575	1,307,412	156,708

As is usual, sardines, bonito, and hake constituted the bulk of the catches and all of these species showed a noticeable decline in the volume of the catch when compared with the previous twelve months, but in every instance, the average price per pound during 1947 was higher than in the preceding year. Of the preservable varieties caught in 1947, anchovies was the only one which was caught in larger quantities than in the previous twelve months, but most of the catch had to be disposed of in fresh condition for local consumption since there was little demand

on the part of the canning industry which was unable to absorb any appreciable quantities owing to lack of canning materials and the unsettled conditions in the principal consuming markets, Italy and Greece. Export to those countries was practically impossible even though existing commercial agreements call for the importation of a certain amount of anchovies from Spain.

Table 4 - Catches and First Sales Values of Principal Species (In thousands of pounds and thousands of dollars)

Species	1947		1946	
	lbs.	$(U.S.)	lbs.	$(U.S.)
Sardines	220,066	26,675	229,793	23,121
Anchovies	55,626	6,289	35,069	2,756
Bonito	35,649	9,845	55,072	12,211
Hake	96,405	32,385	152,700	31,014
Hake, small	119,644	24,116	126,766	20,110

The principal activities of the Spanish fishing fleet are centered in the two regions known as Cantabrican and Northwestern, where the two leading fishing ports of Pasajes and Vigo are located. The combined catch of these two regions equals to about 54 percent of the total volume of fish brought into ports, while the combined catches of the two ports represents about 21 percent of the total catches.

While the volume of the catches of these two ports is always about the same, the species brought into each of them are different. Pasajes is the home port for the large fishing boats that go to Greenland and Newfoundland for cod and also for a large number of the medium-sized craft that fish off the coast of Ireland, while Vigo is the center of the smaller vessels which fish the preservable varieties such as bonito, sardines, jurel (Paratractus), etc.

About 75 percent of the fish catch arriving at Vigo was disposed of in fresh state for consumption in the interior markets of the country. Shipment was made either by railway or truck and the transit time took at least twenty hours. Handling is not satisfactory and there is great wastage. The heads and entrails are removed from larger fish before shipment but the smaller species such as sardines, jurel, etc., are shipped round. Fresh fish is usually washed with fresh water and packed in boxes of about 110 pounds gross weight, a third of which is ice.

Fish Canning: Conditions of the fish canning industry were far from satisfactory in the year under report. There were the continued raw material shortages, but most damaging was the inability of the canners to enter the export markets in view of the unreal fixed value of the peseta. Formerly, this country shipped its canned fish to about fifty-seven world markets, Germany and Argentina being the largest consumers, each taking about 300,000 cases a year. The German market has been lost and the Argentine market is disappearing in view of the import restrictions imposed on foreign canned fish by that country in order to protect its own recently established fish canning industry. Faced with a most difficult situation the industry, through its Association, has petitioned the Central Government for assistance and has requested the adoption of the following measures:

1. Negotiation of an agreement with Argentina which would permit the importation of about 3,000 tons of Spanish fish each year.
2. Simplification of export license methods.
3. Authorization to use fifty percent of the foreign exchange received for exports to be used for imports of machinery, tinplate, and other requirements.
4. Timely and greater allocations of materials under Government control.

Spain is rapidly losing the predominant position it has enjoyed as an exporter of canned fish in favor of Portugal and other countries. A more favorable rate of exchange for the peseta would give the industry renewed impetus.

Spanish fish canneries have a normal annual production of about 3,000,000 cases (100-30 mm. cans) and an export surplus of more than 1,000,000 cases. The following table shows the quantities of canned fish that have been exported from this country since 1931. The gap between 1936 and 1941 corresponds to the period of the Spanish Civil War during which there was an embargo on exports, the total production having been consumed in the home market in substitution of other foodstuffs not then available:

Table 5 - Canned and Salted Exports, 1931-36 and 1942-47 (In thousands of cases and thousands of pounds)

Year	Sardines in Oil		Other Fish in Oil		Total Canned Fish		Salted Fish	
	Cases1/	lbs.	Cases	lbs.	Cases	lbs.	Cases	lbs.
1947	136	5,375	160	6,674	295	12,048	96	8,432
1946	186	7,348	75	3,150	262	10,498	15	1,311
1945	99	3,930	188	7,837	287	11,767	40	3,403
1944	34	1,350	48	2,000	82	3,350	9	823
1943	90	3,573	59	2,480	150	6,053	288	25,372
1942	133	5,283	158	6,592	291	11,874	132	11,651
1936	231	9,155	65	2,730	296	11,885	7	654
1935	1,176	47,878	326	13,626	1,502	61,504	38	3,323
1934	1,136	44,990	389	16,246	1,525	61,236	41	3,632
1933	931	36,854	432	18,041	1,362	54,895	76	6,661
1932	897	35,510	622	26,017	1,519	61,527	93	8,195
1931	1,129	44,722	825	34,506	1,955	77,028	108	9,488

1/ 100 - 30 mm. cans equals 1 case.

According to several leading canners, the primary causes for the decreased production in recent years are:

1. Lack of raw fish due to the non-appearance of usual sardine runs.
2. Government control over necessary supplies.
3. Lack of access to adequate supplies of tinplate, wire, rubber, and other essential materials which are normally imported.

These factors, together with the inability to reduce mounting costs of production, resulting from labor and social laws, have severely hampered the industry.

The last normal year for the Spanish fish canning industry was 1935 when the peak was reached so far as volume of exports were concerned. In that year, the cost of production of a case of 100 cans of sardines in oil, one-quarter "club," 30 millimeters, 190/200 grams, (6.1/6.4 ounces) which is the standard used by the industry, was about $6.15. In 1947, if the plants were able to work at full capacity, the production cost of the same unit would be about $26.26. However, since the plants worked only at 5 to 10 percent of capacity in 1947, the cost of production was from $34.40 to $40.50 per case. The Portuguese canners who are presently Spain's chief competitors are able to quote sardines at $14.00 a case f.o.b. Lisbon.

Venezuela

FISH CANNING INDUSTRY, 1947: The fish canning industry continued to operate on a satisfactory basis, although it felt the loss of several export markets, according to the International Reference Service of the Department of Commerce. Surplus exportable stocks at the end of the year were estimated at around 350,000 cases. Production of canned fish in 1947 amounted to 7,476 metric tons, compared with 7,740 metric tons in 1946.

International

EUROPEAN PROGRAMS OF FISHERY RECONSTRUCTION AND DEVELOPMENT: Introduction: In order to delineate the general lines of the present programs of European nations for further reconstruction and development of agriculture, including fisheries, up to about 1950-51, to appraise some of the problems and difficulties which may arise in carrying these programs through, and to indicate fields in which action might be taken on national, European, and world levels to deal with these problems, the Food and Agricultural Organization of the United Nations, in June 1948, issued the report, European Programs of Agricultural Reconstruction and Development. The report does not cover non-food agricultural products, nor does it mention, except incidentally, the outlook for fisheries or the problems of the fishing industry.

The following are excerpts from this report which deal with the outlook and problems of the fisheries of Europe:

Characteristics of Europe's Fisheries: The European fishing industry was in a stage of rapid development between the two wars. In the principal countries of northwestern Europe, fishing operations became largely mechanized and activities were extended from the North Sea and Atlantic coasts to several sections of the Arctic Ocean. Nevertheless, in many countries, coastal and fresh-water fisheries, very often associated with agriculture, were still carried on with small craft and simple equipment. During hostilities, many of the larger units of the fishing fleets of Norway, Belgium, the Netherlands, Germany, France, and the United Kingdom were used for war purposes, and a great proportion of them were lost. Portugal and Spain continued to expand their national fishing fleets.

Large quantities of fresh fish were shipped from Norway and Denmark to Germany and from Iceland and the Faroes to the United Kingdom. In Iceland and Norway, the construction of freezing plants was intensified and has been continued. In some of the countries, fish consumption greatly increased during the war, when meat supplies were short, and fish has come to play a more important role in the diet. In Norway, technological developments immediately before the war enabled that country during the war to refine its own herring oil for the margarine industry.

Fisheries Production Plans: So as to take steps for modifying or better implementing the food output goals of two to three years hence, an attempt has been made in this report to present a set of projections centering approximately on 1950-51, with comparisons for 1934-38 and 1946-47.

Fish landings are expected to increase through 1950-51. Since the war, the reconstruction of fishing fleets has gone forward at a rapid pace, and in some countries, the fleet now equals or even exceeds the prewar size. Landings in 1947 about reached the level of prewar since increased production in several northwestern European countries, such as Iceland, Belgium, and Denmark, more than made up for the reduced production of other European countries, such as France and Germany. Postwar landings in Norway are now equal to those of the best prewar years. Heavier catches have been possible because of favorable climatic and oceanographic conditions; the increased stocks of fish in the waters of northern and western Europe have for the time being resulted in greater returns per unit of effort. The salting of cod and related species for export, which was virtually discontinued during the war, has been revived to some extent, but the producing countries continue to look for outlets for the fresh and frozen products. Here several market obstacles are encountered since most European countries are not equipped with the necessary refrigeration facilities for transport and storage. The figures for 1950-51 in Table 1 give only a first rough indication of intentions: they are still under examination and subject to substantial revision.

Table 1 - Fisheries Production Programs for 1950-51 & Comparisons with Prewar & 1946-47 1/

Country	1934-38 (000 metric tons)	1946-47 (000 metric tons)	1950-51 as % of 1934-38	Country	1934-38 (000 metric tons)	1946-47 (000 metric tons)	1950-51 as % of 1934-38
Iceland	274	368	182	Poland	19	30	526
Ireland	12	21	200	Czechoslovakia	3	2	133
United Kingdom	1,039	1,032	110	Hungary	6	6	133
Norway	921	962	110	Rumania	10	8	120
Finland	35	49	143	Bulgaria	4	4	125
Sweden	127	210	157	Greece	35	22	143
Denmark	90	197	278	Albania	-	-	-
Netherlands	226	190	111	Yugoslavia	8	8	625
Belgium	59	70	238	Italy	200	160	125
Luxemburg	-	-	-	Spain	489	450	125
France	424	244	106	Portugal	235	285	136
Germany	620	280	65	Turkey	22	21	568
Austria	3	1	100	Total Europe	4,863	4,622	116
Switzerland	2	2	100				

1/Prewar figures represent the 5-year average 1934-38, although in a few cases it has been necessary to use figures for a smaller number of years within that period.
Figures for Spain refer to years within the period 1931-35, and for Turkey to the years 1935-39.
Prewar figures have been adjusted to postwar boundaries.
Precisely similar assumptions are made in the projections for 1950-51.
Landings of fish in round weight. Figures for 1946-47 refer to the calendar year 1946 for most of the major producing countries. In some cases, as in Norway, "prewar" data are for calendar year 1938 only. All figures still under examination and subject to substantial revision.
- Negligible.

International Trade in Fisheries Products: Several of the important fishery countries of Europe have relatively small populations and their fishery industries depend largely upon export. Before the war, about 95 percent of the commodity export of the Faroe Islands consisted of fishery products; for Iceland the proportion was almost 90 percent; and for Norway, about 25 percent. New fisheries may play an even more significant part in the exports of these countries. The main consuming countries—such as the United Kingdom, Germany, France, Italy, Spain, and Portugal—normally have extensive fisheries, but they have always been partly dependent upon imports from other producing countries, although some of them, as a whole, may be net exporters. This is due to such factors as price, assortment of species, and time of fish landings. For example, Portugal imports substantial

quantities of relatively low-priced salted fish and exports about an equal quantity of canned fish. The United Kingdom imports fresh herring during the winter months, while it may have an exportable surplus of herring during the summer and fall.

Much of the present trade in fisheries products is conducted through bilateral barter and trade agreements. The Soviet Union is now taking substantial quantities of fisheries products from Norway and Iceland.

The programs for 1950-51 envisage a considerable increase in exports of fish compared with prewar. Such expansion depends mainly upon future possibilities in the very few important exporting countries. Expansion in their catching capacity indicates an expansion in trade, because most of these are countries with small populations.

Markets for European Exports: In respect of fish, vegetables, and fruit, and to a lesser extent potatoes and eggs, a number of European countries have programmed a substantial expansion of exports during the next few years. Added together, these exports would amount to a large quantity, in some items much larger than in any prewar years and larger than the imports programmed by deficit countries. Even allowing for projected exports to non-European countries, there is here a problem of unbalance. Previously, the United Kingdom and Germany were the principal importers, and, at the moment, there are disposal difficulties because the United Kingdom is taking less than prewar and Germany virtually nothing. The question arises whether these two markets are likely to revive and whether other new markets can be opened. FAO already has started some work in Europe on the fish problem and the fruit and vegetable problem.

Fish Consumption Goals: Fish consumption is scheduled for an increase in most countries. While many fisheries countries are optimistic about prospective catches, it must be emphasized that less favorable conditions affecting available stocks of fish in the sea and an adverse change in the present relatively favorable price situation could reduce landings.

THE CUBAN FISHING INDUSTRY

The Cuban Government beginning with 1946 has shown renewed interest in developing the country's fisheries. It has eliminated or suspended several taxes which discouraged production. It is erecting a plant at Batabano for curing and canning fish and byproducts. It has repaired vessels damaged by the hurricane of 1944. It is distributing a limited quantity of lines, hooks, and small fishing craft among fishing cooperatives which it fosters. It has also sought amicably to remove obstacles heretofore imposed by Mexico against fishing in its waters. But all these efforts hardly constitute a fraction of what needs to be done.

--Fishery Leaflet 308

FEDERAL ACTIONS

Food and Drug Administration

PERUVIAN CANNED BONITO AND TUNA: Statements of general policy or interpretation in regards to Peruvian canned bonito and tuna were issued by the Food and Drug Administration and published in the Federal Register of October 28, 1948. The following is the full text:

PERUVIAN CANNED BONITO AND TUNA

Pursuant to section 3 of the Administrative Procedure Act (60 Stat. 237, 238), the following statement of policy and interpretation is issued.

§ 3.6 *Notice to importers of Peruvian canned fish.* In collaboration with the United States Department of State and officials of the Government of Peru, the Food and Drug Administration of the Federal Security Agency has made a study in Peru of the canning of bonito and tuna packed for exportation to the United States. The fish known in Peru as bonito constitutes a major portion of the pack. Representative specimens of Peruvian bonito have been identified as the species Sarda chilensis. This confirms previous information that the species of fish constituting the commercial bonito fishery in Peru is the same species of bonito that has been packed in this country in small quantities and sold as bonito for many years. Minor quantities of another bonito, Sarda velox are apparently caught in Peruvian waters but do not enter the commercial pack to any significant degree. The bonitos, Sarda chilensis and Sarda velox, are not classified as tuna and under the provisions of the Federal Food, Drug, and Cosmetic Act have never been legally labeled as tuna, but must be labeled as "bonito" or "bonito fish."

Two species of tuna, "skipjack" (Katsuwonus pelamis) and "yellowfin" (Thunnus macropterus), are commercially canned in Peru but constitute a relatively small proportion of the Peruvian pack of canned fish exported to the United States.

Information developed during the investigation in Peru shows that the bonito (Sarda chilensis) can be readily distinguished from the tunas. Consequently no difficulty should be encountered by packers in keeping separate the fish in the two classifications and in properly labeling the canned product before shipment.

The provisions of the Federal Food, Drug, and Cosmetic Act require that importations of canned bonito and canned tuna, when offered for entry into the United States, must bear labels designating the product as "bonito" or as "tuna", as the case may be. Shipments that are unlabeled or mislabeled when offered for entry must be detained and are subject to refusal of admission, with consequent exportation or destruction.

Dated: October 20, 1948.

[SEAL] J. DONALD KINGSLEY,
Acting Administrator.

Department of State

ANNOUNCEMENT OF INTENTION TO ENTER INTO TARIFF NEGOTIATIONS, April 1949: The Interdepartmental Trade Agreements Committee, on November 5, issued formal notice of the United States intention to participate in negotiations with 11 foreign countries for reciprocal reduction of tariff and other trade barriers, looking toward accession of those countries to the General Agreement on Tariffs and Trade concluded at Geneva on October 30, 1947, by the United States and 22 other countries. The forthcoming negotiations are scheduled to begin at Geneva on April 11, 1949. Plans for the negotiations were developed and the date was set, at the Second Session of the Contracting Parties to the General Agreement, held at Geneva in August and September of this year.

The 11 countries which have expressed their desire to accede to the General Agreement and to participate in the forthcoming negotiations are: Denmark, the Dominican Republic, El Salvador, Finland, Greece, Haiti, Italy, Nicaragua, Peru, Sweden, and Uruguay. The countries which participated in the 1947 negotiations were: Australia, Belgium, Brazil, Burma, Canada, Ceylon, Chile, China, Cuba, Czechoslovakia, France, India, Lebanon, Luxembourg, The Netherlands, New Zealand,

Norway, Pakistan, Southern Rhodesia, Syria, the Union of South Africa, the United Kingdom, and the United States. All of these countries, except Chile, had put the General Agreement into provisional effect by July 31, 1948.

The countries participating in the 1947 negotiations and the additional countries expected to participate in the 1949 negotiations together account for some two-thirds by value of total United States exports and almost three-fourths of United States imports, on the basis of 1947 figures.

The Trade Agreements Committee also made public November 5, a list, for each country with which the United States proposes to negotiate, of all products imported into the United States on which possible tariff concessions may be considered in the negotiations.

Among the many items listed for all the countries named above, the fishery industries will be interested in the following articles imported into the United States which it is proposed should be considered for possible modification of duties and other import restrictions, imposition of additional import restrictions, or specific continuance of existing customs or excise treatment in the trade agreement negotiations which are proposed with the countries listed:

Country	Tariff Act of 1930 Par	Item
Greece	1545	Sponges not specially provided for (except hardhead or reef and not including sponges commercially known as sheepswool, yellow, grass, or velvet).
	1545	Manufactures of sponges, or of which sponge is the component material or chief value, not specially provided for.
Italy	718(a)	Fish, prepared or preserved in any manner, when packed in oil or in oil and other substances: Anchovies and antipasto, valued at over 9 cents per pound, including the weight of the immediate container.
	775	Pastes, balls, puddings, hash (except corned beef hash) and all similar forms, composed of vegetables, or of vegetables and meat or fish, or both, not specially provided for.
	1538	Manufactures of mother-of-pearl or shell, or of which these substances or either of them is the component material of chief value, not specially provided for; and shells and pieces of shells engraved, cut, ornamented, or otherwise manufactured.
Peru	718(a)	Fish, prepared or preserved in any manner when packed in oil or in oil and other substances: Tuna: Bonito and yellowtail.

The procedure to be followed by the United States Government in preparing for and carrying out the negotiations is in line with that which has been followed in previous trade agreement negotiations, with such modifications as are made necessary by the Trade Agreements Extension Act of 1948. Under Section 4 of the Trade Agreements Act of 1934, as amended, interested persons are afforded an opportunity to present their views concerning the proposed negotiations. The Committee for Reciprocity Information was designated by Executive Order as the agency to receive such views.

The Committee for Reciprocity Information and the U. S. Tariff Commission on November 5 announced public hearings beginning December 7.

In accordance with the Trade Agreements Extension Act of 1948, the lists of products on which possible United States tariff concessions may be considered have been transmitted by the President to the Tariff Commission which is required to investigate, hold hearings, and report to him within 120 days, in regard to each such item:

(1) The extent to which United States tariffs or other import restrictions may be reduced without causing or threatening serious injury to the domestic industry producing like or similar articles; and

(2) What, if any, additional import restrictions would be required to prevent such injury.

The hearings held by the Tariff Commission and those held by the Committee for Reciprocity Information were conducted concurrently, but the hearings relative to particular commodities were scheduled so as to avoid conflict.

No United States tariff concession will be made on any import product not appearing on the lists made public November 5, unless it is subsequently included in a supplementary published list. Inclusion of a given product on such a published list does not necessarily mean that a concession is to be made on the product. Recommendations by the Trade Agreements Committee to the President on concessions to be offered will not be made until after the information received through the Committee for Reciprocity Information and the Tariff Commission has been studied, together with all other data available to the trade agreements organization. Concessions actually made will, of course, depend on the outcome of the negotiations.

Each new country which completes tariff negotiations with existing contracting parties will accede, in its own right, to the concessions negotiated by those contracting parties in 1947. Furthermore, each new acceding country must extend to all other countries with which it has completed tariff negotiations, in their own right, all concessions which it negotiates in the forthcoming meeting. In this connection, it should be borne in mind that such extension of previously negotiated concessions is a bargaining factor in the forthcoming negotiations.

The General Agreement includes the so-called escape clause, required by Executive Order, which permits the United States to modify or withdraw a concession if it is found that, as a result of unforeseen developments and of the concession, imports are entering this country in such increased amounts and under such circumstances as to cause or threaten serious injury to the domestic industry producing like or similar products.

* * * * *

NORTHWEST ATLANTIC FISHERIES CONFERENCE: In view of the serious depletion of certain commercially-important species of fish in the Northwest Atlantic, an international conference will be convened by this Government in Washington on January 26, 1949, for the purpose of discussing the development of means for formal international cooperation in the investigation and, where necessary, the conservation of the fishery resources in question, the Department of State announced on November 10.

As a result of an informal approach to various governments to determine the extent of current international interest in the fisheries of the Northwest Atlantic, invitations to participate at the January Conference have been issued to the following countries: Canada, Denmark, France, Iceland, Italy, Newfoundland, Norway, Portugal, Spain, and United Kingdom.

In its consideration of the need for international cooperative action, this Government has, of course, been particularly interested in the condition of those species in the Northwest Atlantic area fished by United States nationals. The backbone of the New England fishing industry is the otter trawl fishery. This fishery brings to port the various species of very valuable bottom-living fishes. At the present time, the stocks of these species on the New England Banks are at a relatively low average level of abundance.

The abundance of marketable-sized haddock is now at an all time low. In an effort to continue bringing in haddock to satisfy the large demand, the industry has been forced to resort to fishing for immature and baby fish. This development is extremely unfortunate, for although admittedly it is increasing the present catch to a certain extent, it is seriously decreasing the potential production of this fishery.

Fishing for rosefish has been very heavy in recent years, and the abundance of this fish has been gradually reduced to the point where United States vessels have to steam much farther from port in order to find commercial quantities. Ten years ago, even five years ago, the bulk of the catch of rosefish was taken within 150 miles of Gloucester and Boston, in the Gulf of Maine and South Channel. Now many vessels are forced to travel to Sable Island and Banquero Bank, 500-600 miles from port in order to return with a payload.

Catches of halibut have gradually dwindled through the years until today they constitute an insignificant quantity. The catches of cod from the New England Banks are likewise reduced and, accordingly, an increasing number of lengthy and expensive trips to the Nova Scotian Banks have become necessary.

The general scarcity of groundfish on the New England Banks has not been disastrous to the fishing industry only because of the very high prices being paid for fish since the end of the war. Should a more bountiful supply of meat cause the price of fish to drop, the value of the United States groundfish landings, if they remain at the present low level, may be so small as to have a serious financial effect upon the domestic industry.

The United States otter trawl fleet is, at present, larger than at any other time in history and, with protein food so much in demand, indications are that it will become even larger. In addition, the fleets of many foreign countries are rapidly expanding operations in an attempt to satisfy the great world food demand. The North Sea and other important European fishing areas have apparently become depleted to such an extent that they produce only a fraction of former poundages. It is possible that the depletion of European banks will result in a shift in the operations of many European vessels to the Northwest Atlantic. With the expected heavy exploitation of the fisheries of the Northwest Atlantic, the question of maintaining the highest possible level of productivity becomes increasingly important and urgent. The present scarcity of fish on the New England Banks, and the probable increase in fishing pressure by our own and by foreign vessels, indicates the extreme value of providing means for determining if the decline of the fisheries can be stopped, and if production can be increased in the future. For example, our fishery biologists are certain that the protection of small haddock would substantially increase the future landings.

A great deal of research would, of course, be necessary to find out how other increases, for haddock and for other species, could be obtained. To put into effect any changes which, as a result of such research, are found to be useful in in-

creasing the production of these fisheries, some sort of regulation would be necessary inasmuch as voluntary changes have little chance of success.

The offshore fishing banks of the Northwestern Atlantic are fished by nationals of many countries besides the United States. Thus, if the various New England States, or the Federal Government, regulated the fishing methods to be used by United States fishermen, while the other countries were free to use whatever methods they wished, little help would be afforded the fisheries. Regulations, therefore, must be put into effect by agreement of the various countries who, at present and in the future, fish the banks of the Northwest Atlantic.

Scientific study of these fisheries, a prerequisite to any regulations, would also be undertaken best on an international scale, with a pooling of scientific facilities and the knowledge of fishery experts of all the interested countries. It is emphasized that the purpose of any regulations, which might grow out of scientific study following an international fisheries agreement, would be designed to increase the sustained production of these fisheries. It is not contemplated that any regulation would be recommended without adequate scientific evidence proving that the proposed measure will actually serve that purpose.

International interest in certain fisheries of the North Atlantic Ocean is evidenced by the fact that, for centuries, the nationals of North American and western and southern European countries have fished portions of this important area. As a result of such interest, a number of treaties dealing with accessory rights on shore and in adjacent waters have been developed and adjusted from time to time over the years. Until recently, however, consideration was not given to the desirability of formal international cooperation in the conservation and development of the fishery resources.

The increasing recognition of the seriousness of the existing and potential depletion of commercially-important species of fish in the North Atlantic resulted in an international conference in London in 1937. It was, at that time, considered feasible to treat the entire North Atlantic as a single conservation unit. The International Convention for the Regulation of Meshes of Fishing Nets and the Size Limits of Fish which was concluded at this conference was accordingly designed to apply to the entire North Atlantic.

The 1947 Convention did not enter into force and the British Government, therefore, convened other international conferences in London in October 1943 and April 1946 to reconsider this general problem. The United States was represented by an observer delegation at these International Overfishing Conferences. After discussions with the other States contiguous to the Northwest Atlantic, the United States suggested that there were actually two areas in the North Atlantic which were readily separable because of the nationals concerned and the problems involved. It was therefore proposed that consideration be given to the desirability of separate treatment for the Northeast and Northwest Atlantic. The agreement of the 1946 Conference to this concept is evidenced by the fact that the Convention which resulted from the work of the Conference set the western boundary of the Convention area at 42 degrees west longitude.

Since it has been agreed that it would be preferable to give separate consideration to the Northwest Atlantic, the United States Government, after consultations with the interested States of the United States and the New England fishing industry, has prepared a draft convention for use at the forthcoming conference.

The draft convention will be used only as a basis for discussion, and does not necessarily represent the position to be taken by this Government at the conference.

The draft International Convention for the Northwest Atlantic Fisheries follows:

DRAFT

INTERNATIONAL CONVENTION FOR THE NORTHWEST ATLANTIC FISHERIES

PREAMBLE

The Governments whose duly authorized representatives have subscribed hereto, sharing a substantial interest in fishery resources of the Northwest Atlantic Ocean, have resolved to conclude a convention for the investigation, protection and conservation of fisheries of the Northwest Atlantic Ocean in order to make possible the maintenance of a maximum sustained catch from those fisheries and to that end have agreed as follows:

ARTICLE I

1. The area to which this Convention applies shall be all waters, except territorial waters, bounded by a line beginning at a point on the coast of Rhode Island in 71°40' west longitude; thence due south to 39°00' north latitude; thence due east to 42°00' west longitude; thence due north to 59°00' north latitude; thence due west to 44°00' west longitude; thence due north to the coast of Greenland; thence along the west coast of Greenland to 59°00' west longitude; thence due south to 61°00' north latitude; thence due west to 64°30' west longitude; thence due south to the coast of Labrador; thence in a southerly direction along the coast of Labrador to the southern terminus of its boundary with Quebec; thence in a westerly direction along the coast of Quebec, and in an easterly and southerly direction along the coasts of New Brunswick, Nova Scotia, and Cape Breton Island to Cabot Strait; thence along the coasts of Cape Breton Island, Nova Scotia, New Brunswick, Maine, New Hampshire, Massachusetts, and Rhode Island to the point of beginning.

2. The area defined in the preceding paragraph shall be divided into the sub-areas set forth in the Annex of this Convention. These sub-areas may be modified by unanimous recommendation of the Commissioners of the appropriate Panels established pursuant to Article IV and upon approval of the Commission established pursuant to Article III.

ARTICLE II

This Convention includes the Annex attached hereto which forms an integral part hereof. All references to the Convention shall be understood to include the Annex either in its present form or as modified in accordance with Article I.

ARTICLE III

1. The High Contracting Parties agree to establish and maintain a commission, to be known as the International Commission for the Northwest Atlantic Fisheries, hereinafter referred to as the Commission. The Commission shall be composed of three Commissioners selected by each of the High Contracting Parties. The Commissioners may be assisted by one or more experts and advisers.

2. Each High Contracting Party shall pay the expenses of its Commissioners, experts and advisers. The joint administrative expenses incurred by the Commission shall be defrayed by the High Contracting Parties in the form and proportion determined by the Commission. For the purpose of this determination, the Commission shall take cognizance of the catch by each High Contracting Party of the species of fish listed in the Annex, including for the purpose of this calculation only, the catch of such species, taken in both the area defined in Article I and the territorial waters adjacent to that area. The joint expenses incurred by the Commission for studies and investigations undertaken pursuant to Article VI shall be defrayed by the High Contracting Parties in the form and proportion recommended by the Commission and approved by the High Contracting Parties represented on the Panels of the sub-area or sub-areas in which such studies and investigations are undertaken.

3. The Commission shall elect from its number a Chairman, a Vice-Chairman, and a Secretary, each of whom shall serve for a term of two years and shall be eligible for re-election. The Commission is authorized to adopt, and to amend subsequently, as occasion may require, suitable by-laws or rules for the conduct of its meetings and for the exercise of its functions and duties. The secretariat of the Commission shall also act as secretariat for the Panels.

4. The Commission shall meet at least once every year and at such other times as determined by the Chairman, who shall call meetings at the request of any Commissioner and with the approval of the Commissioners of any two of the High Contracting Parties. The meetings of the Commission shall be held at a place of meeting in North America to be agreed upon by the Commissioners.

5. A majority representation of the High Contracting Parties shall constitute a quorum.

6. Each Commissioner shall have one vote. Any Commissioner of any High Contracting Party shall have the right to cast the ballot of any other Commissioner or Commissioners of that High Contracting Party who may be absent from a Commission meeting. Decisions of the Commission shall be taken by a simple majority of the votes cast, except that a two-thirds majority of the votes cast shall be required for the adoption of regulations pursuant to Article IX.

ARTICLE IV

1. For the purpose of regulation within the sub-areas, the High Contracting Parties agree to establish and maintain Panels for each of the sub-areas provided for by Article I. High Contracting Parties participating on any Panel shall be represented on such Panel by their three Commissioners. Each Panel shall elect its chairman who shall serve for a period of one year and shall be eligible for re-election. It is authorized to adopt and to amend subsequently, as occasion may require, suitable by-laws or rules for the conduct of its meetings and for the exercise of its functions and duties. The secretariat of the Commission shall act as the secretariat for the Panels.

2. A two-thirds majority of the Commissioners of a Panel shall constitute a quorum.

3. Each Panel Commissioner shall have one vote. Any Panel Commissioner of any High Contracting Party shall have the right to cast the ballot of the other Panel Commissioner or Commissioners representing that High Contracting Party who may be absent from a Panel meeting. Decisions of the Panel shall be taken by a simple majority of the votes cast, except that the adoption of regulations pursuant to Article IX, paragraph 2, shall require a two-thirds majority of the votes cast, which majority shall include the votes of the Panel Commissioners representing High Contracting Parties with coastlines contiguous to the sub-area.

4. The Commissioners of any non-participating High Contracting Party shall have the right to attend the meetings of any Panel as observers.

5. As soon as possible after the entry into force of this Convention, each Panel shall be established by those High Contracting Parties entitled to representation thereon, as specified in the Annex, which have ratified or adhered to the Convention.

6. For a period of three years from the date of entry into force of this Convention, Panel representation shall be as specified in the Annex. Panel representation shall be reviewed annually thereafter by the Commission, which shall have the power to determine the representation, on the basis of current substantial exploitation in such sub-area of the species of fish listed in the Annex, except that each High Contracting Party with coastlines contiguous to a sub-area shall have the right of representation on the Panel for the sub-area.

ARTICLE V

1. Each High Contracting Party shall be entitled to set up an Advisory Committee to be composed of persons who shall be well informed concerning the problems of the Northwest Atlantic Fisheries. Any Advisory Committee or any representative or representatives thereof may attend as observers all non-executive meetings of the Commission or of any Panel on which their Government is represented.

2. The Commission or any Panel thereof may hold such public hearings as may be useful in carrying out the provisions of this Convention. The Commissioners of each High Contracting Party may hold public hearings within the territories they represent.

ARTICLE VI

1. The Commission may, either in collaboration with agencies of the High Contracting Parties or other public or private agencies and organizations or independently:

(a) make such investigations as it finds necessary into the abundance, life history and ecology of any species of aquatic life found in various parts of the area defined in Article I;

(b) collect and analyze statistical information relating to the current conditions and trends of the fishery resources of the Northwest Atlantic Ocean;

(c) study and appraise information concerning the methods for maintaining and increasing stocks of fish in the Northwest Atlantic Ocean;

(d) hold or arrange such hearings as may be useful or essential in connection with the development of complete factual information necessary to carry out the provisions of this Convention;

(e) conduct fishing operations at any time for purposes of scientific investigation;

(f) publish and otherwise disseminate reports of its findings and statistical, scientific and other pertinent information relating to the fisheries of the Northwest Atlantic Ocean as well as other such reports as fall within the scope of the Convention.

2. In order to provide for cooperation between the Commission and other public international organizations with related interests, the Commission shall enter into arrangements with the competent authorities of such organizations concerning the methods of cooperation.

ARTICLE VII

Each Panel may recommend to the Commission studies and investigations within the scope of this Convention which are deemed necessary in the development of factual information relating to its particular sub-area.

ARTICLE VIII

The Commission may make recommendations to any or all High Contracting Parties concerning any matters which relate to the Northwest Atlantic Fisheries and to the objectives and purposes of this Convention.

ARTICLE IX

1. Subject to the provisions of Article XI, the Commission may adopt regulations with respect to the area defined in Article I which:

(a) require the submission of statistics pertaining to the catch of various species of fish or other data in such manner and with such frequency as deemed necessary to determine the conditions and trends of the fisheries of the Northwest Atlantic Ocean and to carry out the other provisions of this Convention;

(b) fix methods of measurement.

2. Subject to the provisions of Articles X and XI, each Panel may, with respect to the sub-area under its jurisdiction, adopt regulations, based upon scientific evidence and designed specifically to make possible the maintenance of a maximum sustained catch from the fisheries of the sub-area, which:

(a) establish open and closed seasons;

(b) close to fishing such portions of the sub-area as the Panel finds to be a spawning area or to be populated by small immature fish;

(c) establish size limits for any species;

(d) fix the kind, size and specifications of fishing gear and other fishing appliances;

(e) establish an over-all conservation catch limit for any species;

(f) make such other regulations as may be necessary.

ARTICLE X

Regulations adopted by the Commission or the Panels thereof under this Convention shall apply only to the species listed in the Annex.

ARTICLE XI

The Chairman of the Commission shall issue, for action by the High Contracting Parties in accordance with Article XIII, regulations adopted by the Commission or any Panel thereof within the time specified in each regulation. Should the Chairman have reason to believe, however, on the basis of scientific evidence, that a Panel regulation interferes with a regulation in force for another sub-area, he shall refer the regulation to the Commission, which shall, within ninety days, either return the regulation to the Panel for reconsideration or instruct the Chairman to issue it.

ARTICLE XII

1. All fishing vessels and persons thereon subject to the jurisdiction of the High Contracting Parties may fish for those species listed in the Annex within the area or any of the sub-areas defined in this Convention, except in violation of any regulations which may be issued by the Commission in conformity with the provisions of Article XI.

2. For the purpose of ensuring proper observance of the provisions of this Convention, duly authorized enforcement officers of any High Contracting Party may board and examine any fishing vessel subject to the jurisdiction of any of the High Contracting Parties which is engaged in fishing or which appears to have been fishing or to be about to fish in the area defined in Article I. The enforcement officers may cite the master of any vessel which has violated the provisions of this Convention or the regulations adopted thereunder to the competent authority designated for that purpose by the High Contracting Party having jurisdiction over the vessel. Copies of the citation, together with a full report of the violation, shall be furnished to the designated authority, and to the Commission, and through appropriate channels to the master of the vessel cited.

3. The authorities of the High Contracting Party having jurisdiction over the fishing vessel alone shall have jurisdiction to conduct proceedings for dealing with violations of the provisions of this Convention or any regulations adopted thereunder and to impose penalties for such violations. Testimonial and other proofs necessary for such proceedings, to the extent that they are under the control of the High Contracting Parties, shall be furnished with reasonable promptness to the authorities responsible for the conduct of such proceedings.

ARTICLE XII

1. The High Contracting Parties agree to enact and enforce such legislation as may be necessary to make effective the provisions of this Convention and the regulations adopted thereunder, with appropriate penalties for violations. Each High Contracting Party shall transmit to the Commission copies of all laws and regulations adopted for this purpose. Within sixty days after receipt of notification of the issuance of regulations by the Commission, each High Contracting Party shall take appropriate action to make such regulations applicable to persons or vessels subject to its jurisdiction. Each High Contracting Party shall notify the Chairman of the Commission immediately of its action with regard to any regulation adopted by the Commission or by any Panel thereof. The Chairman shall notify the other High Contracting Parties immediately of all such notifications. No regulation shall become effective until notifications have been received from all High Contracting Parties of the appropriate Panel or Panels.

2. The High Contracting Parties agree that the possession, shipment, transportation, purchase, sale, or importation or exportation of fish taken in violation of regulations in effect under the authority of this Convention are prohibited.

3. The High Contracting Parties agree to take appropriate action with regard to any act committed by a person or vessel of any country not a party to this Convention which is not in conformity with the provisions of this Convention or regulations in effect thereunder.

4. Each High Contracting Party shall annually transmit to the Commission full details of each infraction of the provisions of this Convention and the regulations adopted thereunder by all fishing vessels and persons thereon subject to the jurisdiction of that High Contracting Party. This information shall include a statement of measures taken for dealing with infractions and of penalties imposed.

ARTICLE XIV

1. This Convention shall be ratified and the instruments of ratification shall be deposited with the Government of the United States of America.

2. Any Government which has not signed this Convention may adhere thereto, after it enters into force, by a notification in writing to the Government of the United States of America.

3. This Convention shall enter into force upon the deposit of instruments of ratification by four signatory Governments, including the Governments of Canada, Newfoundland, and the United States of America, and shall enter into force with respect to each Government which subsequently ratifies or adheres on the date of deposit of its instrument of ratification or of receipt of its notification of adherence.

4. The Government of the United States of America shall inform all other signatory Governments and all adhering Governments of all ratifications deposited and adherences received.

ARTICLE XV

1. At any time after the expiration of ten years from the date of entry into force of this Convention, any High Contracting Party may withdraw from the Convention

on December thirty-first of any year by giving notice on or before the preceding June thirtieth to the Government of the United States of America, which shall communicate copies of such notice to the other High Contracting Parties.

2. Any other High Contracting Party may thereupon withdraw from this Convention on the same December thirty-first by giving notice to the Government of the United States of America within one month of the receipt of a copy of a notice of withdrawal given pursuant to paragraph 1 of this Article.

ARTICLE XVI

1. The original of this Convention shall be deposited in the Archives of the Government of the United States of America, which Government shall communicate certified copies thereof to all the other signatory Governments.

2. This Convention shall bear the date on which it is opened for signature and shall remain open for signature for a period of fourteen days thereafter.

ANNEX

1. The sub-areas provided for by Article I of this Convention shall be as follows:

Sub-area 1 - That portion of the area defined in Article I which lies north of the parallel of 52°15' north latitude.

Sub-area 2 - That portion of the area defined in Article I lying south of the parallel of 52°15' north latitude; to the north of the parallel of 39°00' north latitude; and to the east and north of a rhumb line extending in a northwesterly direction which passes through a point in 43°30' north latitude, 55°00' west longitude, in the direction of a point in 47°50' north latitude, 60°00' west longitude, until it intersects a straight line connecting Cape Ray, on the coast of Newfoundland, with Cape North on Cape Breton Island; thence in a northeasterly direction along said line to Cape Ray.

Sub-area 3 - That portion of the area defined in Article I, lying to the west of sub-area 2 defined above, and to the east of a line described as follows: Beginning at the terminus of the international boundary between the United States of America and Canada in Grand Manan Channel, at a point in 44°46' 35.34" north latitude, 66°54' 11.23" west longitude; thence due south to the parallel of 43°50' north latitude; thence due west to the meridian of 67°40' west longitude; thence due south to the parallel of 42°20' north latitude; thence due east to a point in 66°00' west longitude; thence along a rhumb line in a southeasterly direction to a point in 42°00' north latitude, 65°40' west longitude; thence due south to the parallel of 39°00' north latitude.

Sub-area 4 - That portion of the area defined in Article I lying west of the western boundary of sub-area 3 defined above.

2. For a period of three years from the date of entry into force of this Convention, Panal representation for each sub-area shall be as follows:

(a) Sub-area 1 - Canada, Denmark, France, Newfoundland, Portugal, Spain, United States.

(b) Sub-area 2 - Canada, Denmark, France, Newfoundland, Portugal, Spain, United States.

(c) Sub-area 3 - Canada, France, Newfoundland, United States.

(d) Sub-area 4 - Canada, United States.

3. Pursuant to the provisions of Article X of this Convention, the following species of fish are subject to regulation:

Scientific Name	Common Name
Gadus morrhua (synonym: Gadus callarius)	cod, codfish
Hippoglossus hippoglossus	halibut
Melanogrammus aeglefinus	haddock
Sebastes marinus	rosefish, redfish
Urophysis tenuis	white hake
Urophysis chuss	red hake
Pollachius virens	pollock
Brosme brosme	cusk

* * * * *

U. S. AND MEXICAN FISHERIES CONFERENCE: The result of the discussions between officials of Mexico and of the United States on fishery conservation matters of common concern was announced on November 9 by the Department of State. The discussions, which commenced October 25 in Mexico City, were concluded on November 4, with the signing by both delegations of a Joint Report to the two Governments in which it was recommended that there be concluded a convention for the establishment of an international commission for the scientific investigation of tuna.

The Joint Report of the meeting, which contains the text of the proposed convention, urges the governments to establish a joint commission for the investigation of the tuna resources of the Pacific Ocean with a view to maintaining the resource at a level which will assure a reasonable maximum utilization, year after year, without depletion. The Report concludes that such convention would result in positive benefit to the fishing industries of both countries and would contribute to conservation of the food resources. The full text of the Joint Report follows:

JOINT REPORT
SUBMITTED TO THE GOVERNMENTS OF MEXICO AND THE UNITED STATES BY THE DELEGATIONS OF BOTH COUNTRIES APPOINTED TO TAKE PART IN EXPLORATORY CONVERSATIONS WITH REGARD TO SOME ASPECTS OF THE FISHERIES OF THE PACIFIC OCEAN

The Delegations of the United States and Mexico in exploratory conversations beginning October 25, 1948 to which this Report refers, were composed as follows:

For the United States: Delegates: Dr. W. M. Chapman, Special Assistant to the Under Secretary of State, Chairman; Mr. Paul J. Reveley, Chief, Division of Mexican Affairs, Department of State; Dr. Hilary J. Deason, Chief, Office of Foreign Activities, Fish and Wildlife Service, Department of the Interior, Advisors: Mr. Richard Croker, Chief, Bureau of Marine Fisheries, State of California; Miss Isla V. Davies, Foreign Affairs Specialist, Department of State; Mr. Milton J. Lindner, Chief of Fishery Mission to Mexico; Mr. Arnie J. Suomela, Master Fish Warden, Oregon Fish Commission; Dr. Richard Van Cleve, Acting Director, School of Fisheries, University of Washington; Mr. Taylor G. Belcher, Third Secretary of Embassy, American Embassy in Mexico, Secretary of the Delegation; Miss Janet Park, Fishery Mission to Mexico, Assistant Secretary.

For Mexico: Delegates: Lic. Roberto Cordova, Ambassador of Mexico, Chairman; Lic. Manuel J. Sierra, Legal Advisor of the Ministry of Treasury and Public Credit; Commander Enrique Villegas Bustamante, Director General of Fisheries and Allied Industries of the Ministry of Marine; Lic. Leonardo Pasquel, Special Legal Counselor of the Ministry of Economy, Advisors: Mr. Roberto Arroyo Carrillo, Member of the Technical Commission of the Directorate-General of Fisheries and Allied Industries; Lic. Fernando Robert,

Counselor for the Ministry of Treasury and Public Credit; Lic. Antonio Cobos, Assistant Director-General of Cooperative Development of the Ministry of Economy; Mr. Armando C. Amador, Envoy Extraordinary and Minister Plenipotentiary of Mexico; Lic. Cesar Sepulveda, Secretary of the Delegation.

Both Delegations used as the basis of deliberations the "Draft Convention Between the United States and Mexico for the Investigation of Certain Tuna Fishery Resources" sent to the Mexican Foreign Office by the Embassy of the United States of America with its note No. 2460 of September 24, 1948. Several meetings were held to study the problems presented by the said draft, and after mature consideration and the most frank and cordial exchange of ideas, with regard thereto, and introducing the necessary modifications in the said draft, unanimous agreement was reached upon the text of a "Draft Convention for the Establishment of an International Commission for the Scientific Investigation of Tuna", which is submitted for the consideration of the Governments, as follows:

The United States of America and the United Mexican States, considering their respective interests in maintaining the populations of certain tuna and tuna-like fishes in the waters of the Pacific Ocean off the coasts of both countries, and desiring to cooperate in scientific investigation, and in the gathering and interpretation of factual information to facilitate maintaining the populations of these fishes at a level which will permit the reasonable maximum utilization without depletion year after year, have agreed to conclude a Convention for such purpose and to this end have named as Plenipotentiaries:
The President of the United States of America:

The President of the United Mexican States:

who, having communicated to each other their full powers, found to be in good and due form, have agreed as follows:

ARTICLE I

1. The High Contracting Parties agree to establish and operate a joint commission, to be known as the International Commission for the Scientific Investigation of Tuna, hereinafter referred to as the Commission, which shall carry out the objectives of this Convention. The Commission shall be composed of two national sections, a United States section, consisting of four members, appointed by the Government of the United States of America, and a Mexican section, consisting of four members, appointed by the Government of the United Mexican States.

2. The Commission shall submit annually to the respective Governments a report on its findings, with appropriate recommendations, and shall also inform them, whenever it is deemed advisable, on any matter relating to the objectives of this Convention.

3. Expenses covering emoluments, transportation, subsistence, and others, incurred by each national section for its own personnel, offices and operation, shall be borne by the respective Government. Joint expenses incurred by the Commission shall be paid by the High Contracting Parties in the form and proportion recommended by the Commission and approved by the High Contracting Parties.

4. Both the general annual program of activities and the budget of joint expenses shall be recommended by the Commission and submitted for approval to the High Contracting Parties.

5. The High Contracting Parties shall decide on the most convenient place for the establishment of the Commission's headquarters.

6. The Commission shall meet at least twice each year and whenever requested by either national section. The date and place of the first meeting shall be determined by agreement between the High Contracting Parties.

7. At the first meeting of the Commission the determination will be made by drawing lots as to which national section will provide the chairman from among its members. The secretary of the Commission will be provided by the other national section from among its members. These functionaries will hold office for a period of one year. The section that provided the chairman shall provide the secretary the following year, and vice versa. Thereafter, in this manner, the positions shall alternate.

8. Each national section shall have one vote. Decisions, resolutions, and recommendations of the Commission shall be made only by approval of both sections.

9. The Commission shall be entitled to adopt and to amend subsequently, as occasion may require, by-laws or rules for the conduct of its meetings and for the performance of its functions and duties. Such by-laws, rules or amendments shall be referred by the Commission to the Governments and shall become effective, unless disapproved by either of the two Governments within thirty days from the date of notification.

10. The Commission shall be entitled to employ necessary personnel for the performance of its functions and duties. The appointments shall be distributed equitably between nationals of the United States and Mexico except in special instances in which the appointment of persons of other nationalities is desirable.

11. Each section of the Commission may appoint its own advisors who may attend sessions of the Commission in their advisory capacity when the Commission so determines. Each section may meet separately with advisors from its own country when it deems such meetings desirable.

12. Each section of the Commission may hold public hearings within the territory of its own country.

13. There will be a Director and an Assistant Director of Investigations who shall be technically competent and who shall be designated simultaneously by the Commission and be responsible to it. One of these functionaries shall be a national of the United States and the other a national of Mexico. Subject to the instruction of the Commission and with its approval, the Director shall have charge of:

(a) the drafting of programs of investigation, and the preparation of budget estimates for the Commission;

(b) authorizing the disbursement of the funds for the joint expenses of the Commission;

(c) the accounting of the funds for the joint expenses of the Commission;

(d) the appointment and immediate direction of technical and any other personnel required for the scientific functions of the Commission;

(e) arrangements for the cooperation with other organizations or individuals in accordance with paragraph 18 of this Article;

(f) the coordination of the work of the Commission with that of organizations and individuals whose cooperation has been arranged for;

(g) the drafting of administrative, scientific and other reports for the Commission;

(h) the performance of such other duties as the Commission may require.

14. The Assistant Director shall assist the Director of Investigations in all his functions, and shall substitute for him during his temporary absences. Both the Director and the Assistant Director of Investigations may be freely removed by the Commission.

15. The official languages of the Commission shall be English and Spanish. During the meetings of the Commission its members may use either English or Spanish. When necessary translation shall be made to the other language. The minutes and official documents of the Commission shall be written in both languages. All publications of the Commission also shall be made in both languages. The official correspondence of the Commission may be written at the discretion of the secretary in either language.

16. Representatives of both national sections shall be entitled to participate in all work carried out by the Commission or under its auspices.

17. Each national section shall be entitled to obtain certified copies of any documents pertaining to the Commission except that the Commission will adopt and may amend subsequently rules to ensure the confidential character of records of statistics of individual catches and individual company operations. These rules and amendments shall be referred to the Governments in accordance with the procedures of paragraph 9 of this Article.

18. In the performance of its duties and functions the Commission may request the technical and scientific services of and information from official agencies of the High Contracting Parties, any international, public, or private institution or organization or private individual.

ARTICLE II

The Commission shall perform the following functions and duties:

1. Make investigations concerning the abundance, biology, biometry, and ecology of the yellowfin, bluefin, and albacore tunas, bonitos, yellowtails, and skipjacks (hereinafter referred to as tuna and tuna-like fishes) in the waters of the Pacific Ocean off the coasts of both countries and elsewhere as is required, and of the kinds of fishes commonly used as bait in tuna fishing; and the effects of natural factors and human activities on the abundance of the populations of fishes to which this Convention refers.

2. Collect and analyze information relating to the current and past conditions and trends of the populations of the tuna and tuna-like fishes and tuna-bait fishes of the waters of the Pacific Ocean off the coasts of both countries and elsewhere as is required.

3. Study and appraise information concerning methods and procedures for maintaining and increasing the populations of tuna and tuna-like fishes and tuna-bait fishes in the waters of the Pacific Ocean off the coasts of both countries and elsewhere as is required.

4. Conduct such fishing and other activities, on the high seas and in the waters which are under the jurisdiction of either High Contracting Party, as may be necessary to attain the ends referred to in paragraphs 1, 2, and 3 of this Article.

5. Obtain statistics and all kinds of reports concerning catches, operations of fishing boats and other information concerning the fishing for tuna and tuna-like fishes and the tuna-bait fishes. The High Contracting Parties shall, if necessary, enact legislation in order to make it obligatory for the boat captains or other persons who participate in these fishing activities to keep records of operations, including the volume of the catch by species and the area in which caught, all of these in the form and with such frequency as the Commission deems necessary.

6. Publish or otherwise disseminate reports relative to the results of its findings and such other reports as fall within the scope of this Convention, as well as scientific, statistical, and other data relating to the fisheries for tuna and tuna-like fishes and tuna-bait fishes in the waters of the Pacific Ocean off the coasts of both countries and elsewhere as is required.

ARTICLE III

1. The present Convention shall be ratified in accordance with the legal procedures of each country and the exchange of ratifications shall be made at Washington as soon as possible.

2. The present Convention shall enter into force on the date of exchange of ratifications. It shall remain in force for a period of four years and thereafter until one year from the day on which either of the High Contracting Parties shall give notice to the other High Contracting Party of its intention of terminating the Convention.

3. In the event of termination of the Convention all property of the Commission except the archives shall be returned to the High Contracting Parties in the proportion in which originally provided.

4. At the termination of this Convention the High Contracting Parties will agree as to the final disposition of the archives of the Commission.

The Delegates of the United States of America and of Mexico, to the best of their knowledge, consider that the signing of a Convention between the United States of America and Mexico, in the terms of the above text, will not only result in a positive benefit to the respective fishing industries of both countries, but, due to the aim of the Convention itself, which is to provide for the reasonable maximum utilization of the tuna fishery resources, will also contribute to the far-sighted conservation of food resources in general.

Therefore, the undersigned Delegates, in submitting jointly the result of their exploratory conversations, also respectfully suggest to their respective Governments the conclusion of the foregoing Convention.

Mexico City, November 4, 1948.

For the United States:

Delegates:
W. M. Chapman, Chairman
Paul J. Reveley
Hilary J. Deason

Advisors
Richard Croker
Isla V. Davies
Milton J. Lindner
Arnie J. Suomela
Richard Van Cleve

For Mexico:

Delegates:
Roberto Cordova, Chairman
Manuel J. Sierra
Enrique Villegas Bustamente
Leonardo Pasquel

Advisors
Roberto Arroyo Carrillo
Fernando Robert
Antonio Cobos
Armando C. Amador

In witness whereof the Secretaries of the respective Delegations have inscribed their signatures:

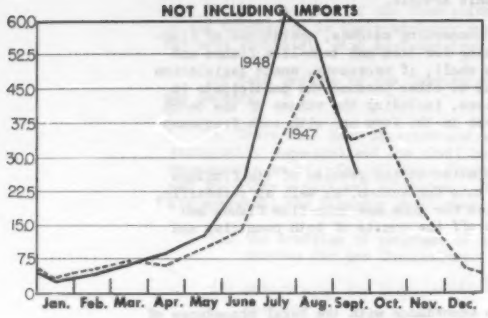
Taylor G. Belcher

Cesar Sepulveda

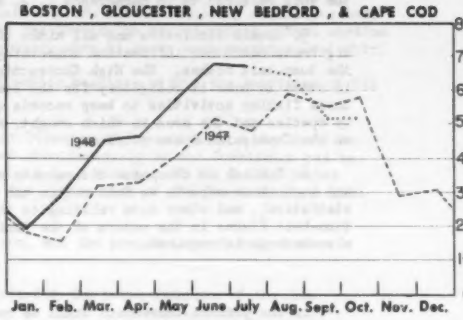
LANDINGS AND RECEIPTS

In Millions of Pounds

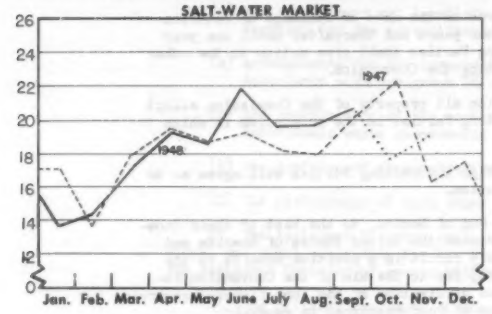
MAINE - LANDINGS *
NOT INCLUDING IMPORTS



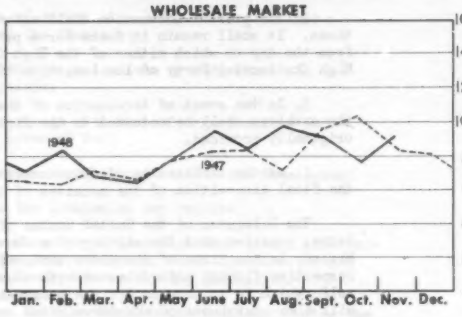
MASSACHUSETTS - LANDINGS
BOSTON, GLOUCESTER, NEW BEDFORD, & CAPE COD



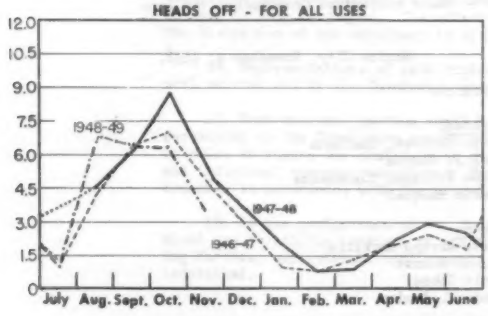
NEW YORK CITY-RECEIPTS OF FRESH & FROZEN FISH
SALT-WATER MARKET



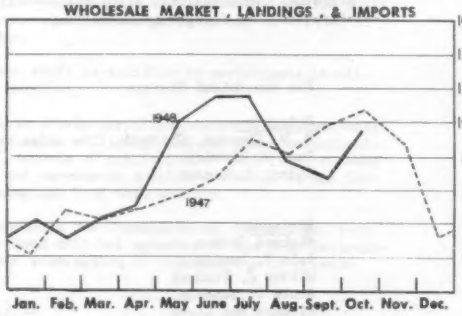
CHICAGO - RECEIPTS OF FRESH & FROZEN FISH
WHOLESALE MARKET



GULF - SHRIMP LANDINGS
HEADS OFF - FOR ALL USES

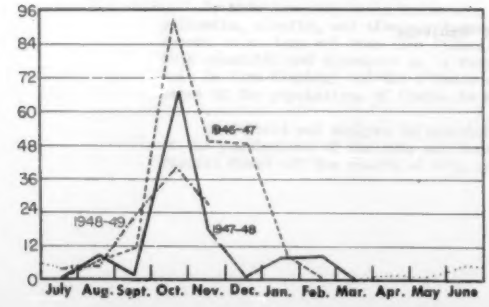


SEATTLE - RECEIPTS OF FRESH & FROZEN FISH
WHOLESALE MARKET, LANDINGS, & IMPORTS

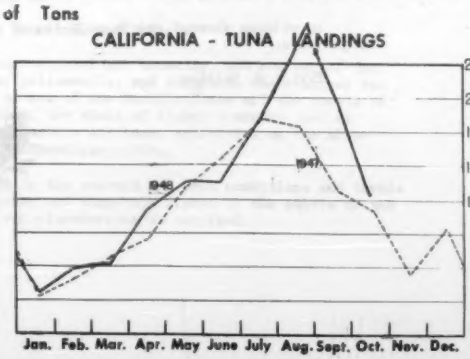


In Thousands of Tons

CALIFORNIA - PILCHARD LANDINGS



CALIFORNIA - TUNA LANDINGS

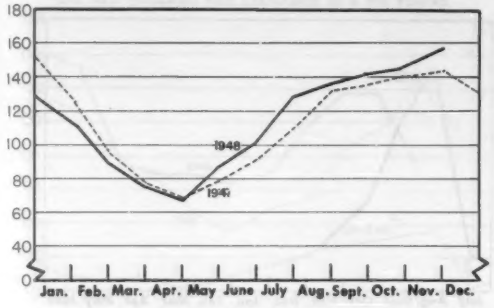


--- ESTIMATED
*REVISED

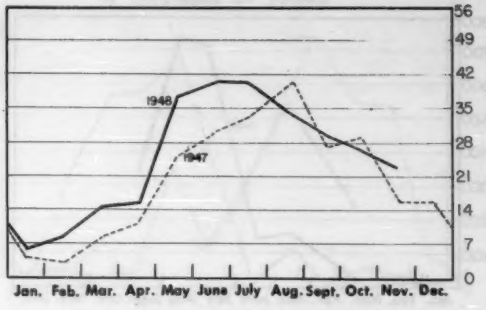
COLD STORAGE HOLDINGS and FREEZINGS of FISHERY PRODUCTS

In Millions of Pounds

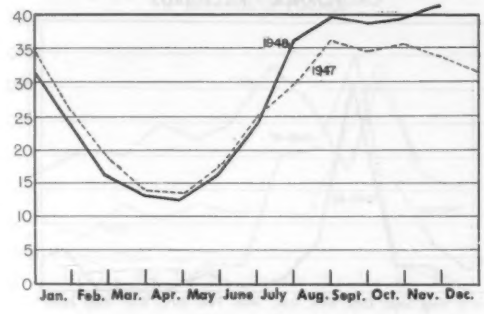
U.S. & ALASKA - HOLDINGS OF FROZEN FISH



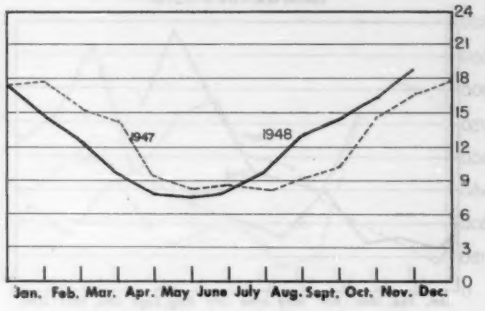
U.S. & ALASKA - FREEZINGS



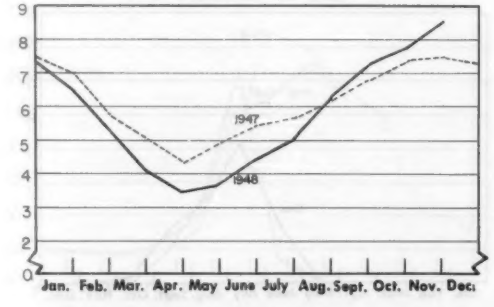
NEW ENGLAND - HOLDINGS OF FROZEN FISH



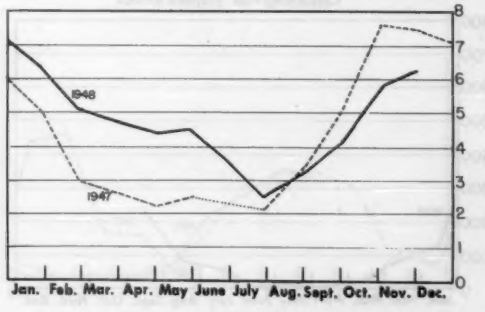
NEW YORK CITY - HOLDINGS OF FROZEN FISH



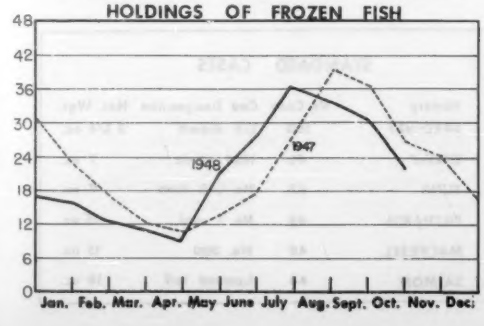
CHICAGO - HOLDINGS OF FROZEN FISH



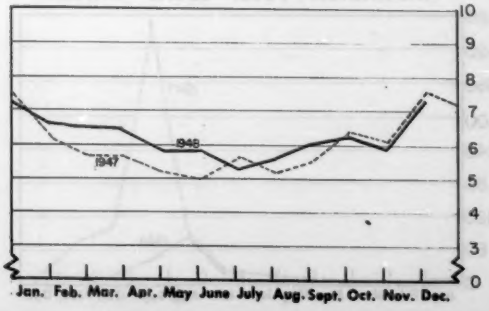
GULF - HOLDINGS OF FROZEN FISH



WASHINGTON, OREGON, AND ALASKA - HOLDINGS OF FROZEN FISH



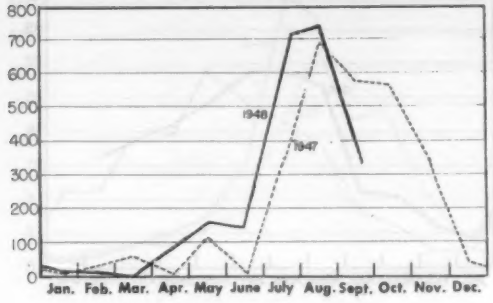
CALIFORNIA - HOLDINGS OF FROZEN FISH



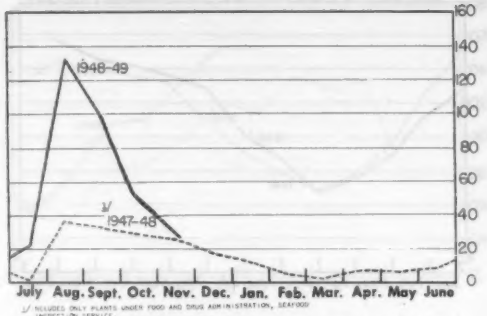
CANNED FISHERY PRODUCTS

In Thousands of Standard Cases

MAINE - SARDINES, ESTIMATED PACK *

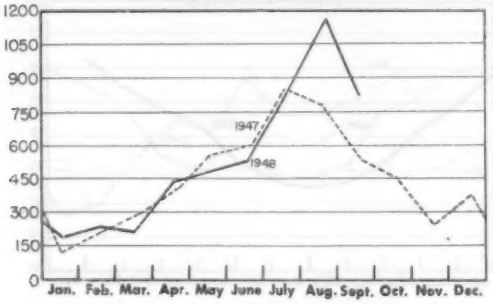


UNITED STATES - SHRIMP

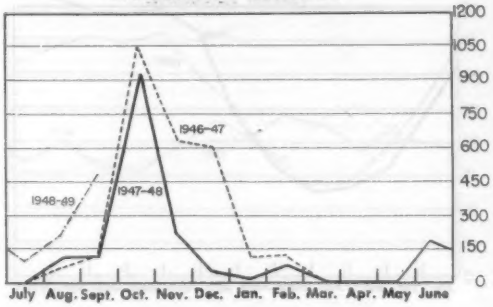


1/ INCLUDES ONLY PLANTS UNDER FOOD AND DRUG ADMINISTRATION, SEAFOOD INSPECTION SERVICE.

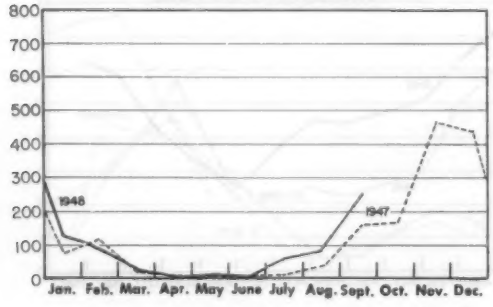
CALIFORNIA - TUNA



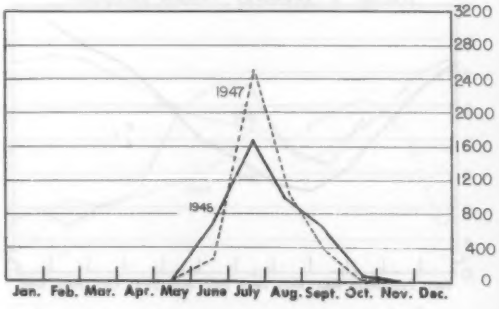
CALIFORNIA - PILCHARDS



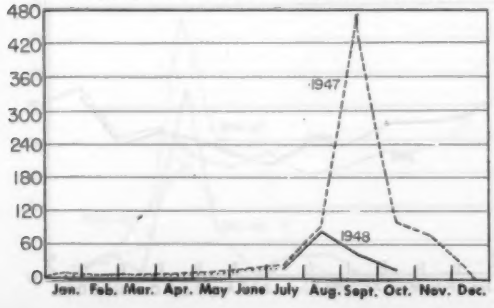
CALIFORNIA - MACKEREL



ALASKA - SALMON



WASHINGTON - PUGET SOUND SALMON *



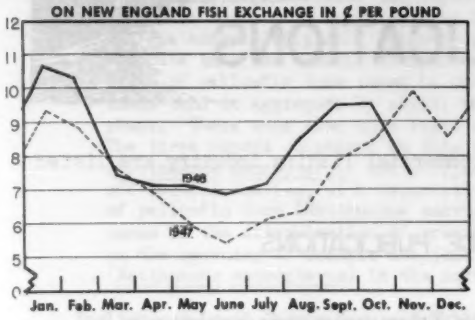
STANDARD CASES

Variety	No. Cans	Can Designation	Net. Wgt.
SARDINES	100	1/4 drawn	3 1/4 oz.
SHRIMP	48	No.1 picnic	7 oz.
TUNA	48	No. 1/2 tuna	7 oz.
PILCHARDS	48	No. 1 oval	15 oz.
MACKEREL	48	No. 300	15 oz.
SALMON	48	1-pound tall	16 oz.

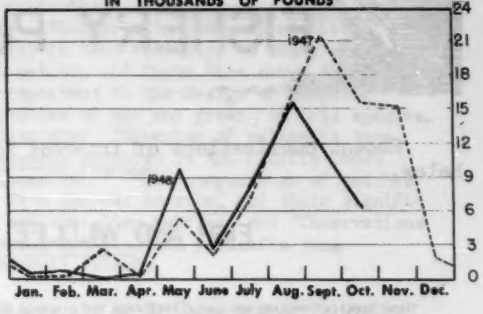
*REVISED

PRICES, IMPORTS and BY-PRODUCTS

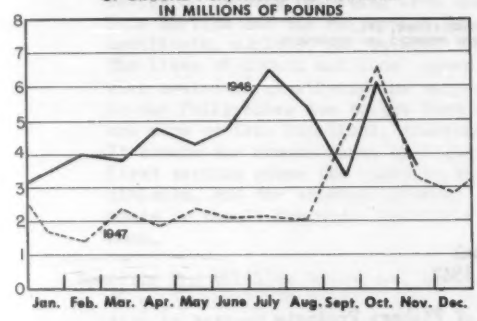
BOSTON - WEIGHTED AVERAGE PRICE
ON NEW ENGLAND FISH EXCHANGE IN ¢ PER POUND



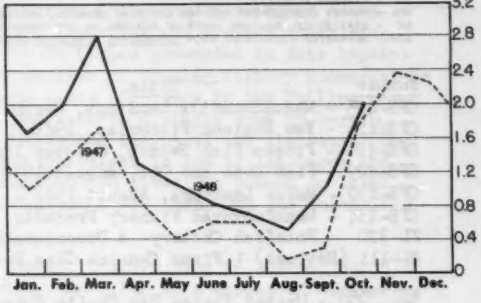
MAINE - IMPORTS OF SEA HERRING
IN THOUSANDS OF POUNDS



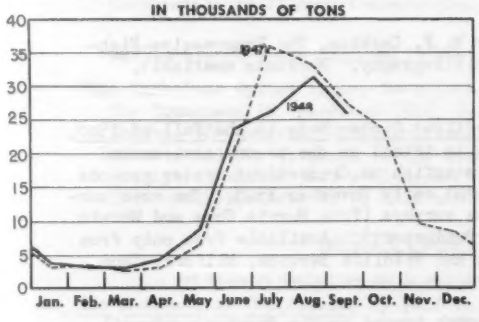
U.S. - IMPORTS OF FRESH & FROZEN FILLETS
OF GROUND FISH, INCLUDING ROSEFISH:-
IN MILLIONS OF POUNDS



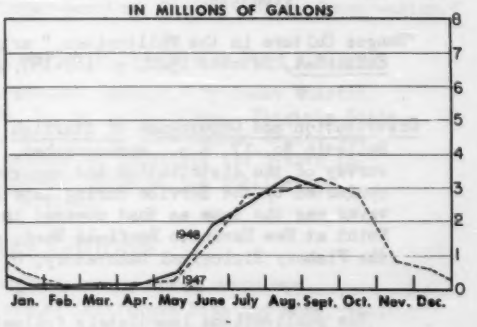
U.S. - IMPORTS OF SHRIMP FROM MEXICO
IN MILLIONS OF POUNDS

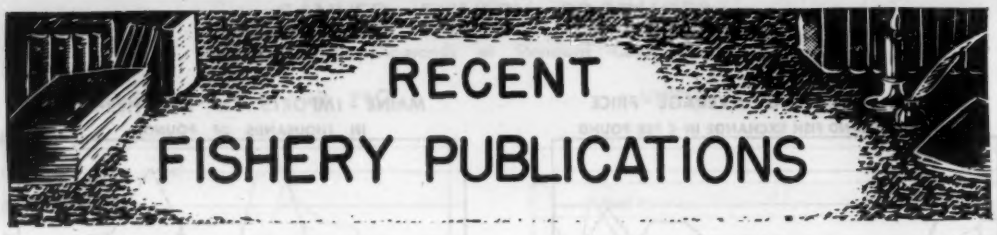


U.S. & ALASKA - PRODUCTION OF FISH MEAL
IN THOUSANDS OF TONS



U.S. & ALASKA - PRODUCTION OF FISH OIL
IN MILLIONS OF GALLONS





Recent publications of interest to the commercial fishing industry are listed below.

FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.
FL - FISHERY LEAFLETS.
MDL - MARKET DEVELOPMENT SECTION LISTS OF DEALERS, LOCKER PLANTS, ASSOCIATIONS, ETC.
SL - STATISTICAL SECTION LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.
SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number	Title
CFS-425	- Massachusetts Landings, March 1948
CFS-426	- New England Fisheries, 1945
CFS-428	- Frozen Fish Report, October 1948
CFS-429	- Fish Meal and Oil, August 1948
CFS-430	- Maine Landings, August 1948
CFS-434	- Manufactured Fishery Products, 1945
FL-320	- Rosefish Cookery--A Demonstration Manual
SL-111 (Revised)	- Firms Canning Clam Products, 1947

Sep. 220 - United States Per Capita Consumption of Fishery Products
Sep. 221 - Preliminary Study of Total Bacterial Plate Count Method for Fishery Products.

"Bangos Culture in the Philippines," article, by W. F. Carbine, The Progressive Fish-Culturist, October 1948, p. 187-197, illus., bibliography. Reprints available.

* * *

Distribution and Occurrence of Starfish on Connecticut Oyster Beds in the Fall of 1948, Bulletin No. 17, 6 p., mimeographed. Reports in detail on the second semi-annual survey of the distribution and occurrence of starfish on Connecticut oyster grounds conducted by the Service during late October and early November 1948. The area surveyed was the same as that covered in previous surveys (from Morris Cove and Merwin Point at New Haven to Penfield Reef, west of Bridgeport). Available free only from the Fishery Biological Laboratory, U. S. Fish and Wildlife Service, Milford, Conn.

* * *

The publications immediately following, although issued by the Service, are available only by purchase from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at the price indicated after each listing.

Contributions to the Biology of the Pacific Tunas, by Milner B. Schaefer and John C. Marr, Fishery Bulletin 44, 206 p., printed, with illus. and tables, 15 cents a copy (from Fishery Bulletin of the Fish and Wildlife Service, Volume 51). Although the Pacific tunas support the most valuable fishery on the Pacific Coast of the United States, and are commercially important elsewhere in the Pacific Ocean, little is known of their life histories, according to the authors of this publication. Important observations on the biology of the yellowfin and skipjack tunas are recorded in the three papers which make up this report. Some of the observa-

tions are based upon material gathered off Costa Rica aboard the factory ship Pacific Explorer during the late winter and spring of 1947 by the authors, who were abroad as scientific observers of the Fish and Wildlife Service. The observation of sexually mature fish and later of spent fish, of both species near Costa Rica, together with the capture of very young juveniles, demonstrates the existence there of a spawning area for the yellowfin tuna, Neothunnus macropterus, and the oceanic skipjack, Katsuwonus pelamis. Similar data gathered at Bikini indicate that the oceanic skipjack spawns also in that vicinity. A study of the sizes of yellowfin tuna taken in commercial catches off Costa Rica shows that the tunas tend to aggregate by sizes, which is important to the design of sampling plans. These data also shed light on the problem of age and growth of this species. The three papers contained in this publication are: "Spawning of yellowfin tuna (Neothunnus macropterus) and skipjack (Katsuwonus pelamis) in the Pacific Ocean off Central America, with descriptions of juveniles:" "Size composition of catches of yellowfin tuna (Neothunnus macropterus) from Central America, and their significance in the determination of growth, age, and schooling habits;" and "Observations on the spawning of oceanic skipjack (Katsuwonus pelamis) and yellowfin tuna (Neothunnus macropterus) in the northern Marshall Islands.

English and Local Common Names of Philippine Fishes, by A. W. Herre and A. F. Umali, Circular 14, 128 p., printed, 25 cents a copy. This publication is the first of a series of reports resulting from the cooperative undertakings of the Fish and Wildlife Service and the Philippine Bureau of Fisheries in a program designed to rehabilitate, explore, and develop the Philippine fisheries and fishery industries. The lists of common and local names of Philippine fishes presented in this booklet will assist in clarifying the very confusing problem of popular fishery nomenclature in the Philippines due to the fact that common names of fishes in the Philippines are more or less localized, sometimes being confined to a single town or barrio. It covers the common names of fishes in 11 Philippine languages and dialects. The first section gives the names in English, the equivalent in the 11 languages and dialects, and the scientific name. The second section gives the common or local names in the 11 languages and dialects, the English equivalent, and the scientific name.

Guarding Our Wildlife Resources, by Rachel L. Carson, Conservation in Action, No. 5, 46 p., printed, 30 cents a copy. This booklet, the fifth in a series of "Conservation in Action" bulletins being issued by the Service, contains the following chapters on fisheries: "Marine Fisheries;" "Inland Fishery Resources;" "International Cooperation in Fishery Conservation;" and "Inter-American Cooperation in Conservation."

ARTICLES BY FISH AND WILDLIFE SERVICE AUTHORS IN OTHER PUBLICATIONS

"The Turbulent Oyster Trade, Part 1--In the Nineteenth Century," by James Wharton. The Commonwealth, November 1948, Vol. xv, No. 11, p. 9-12, illus. Virginia State Chamber of Commerce, Richmond, Va., 15 cents per issue. The author traces the efforts made by Virginia in the nineteenth century to stabilize its oyster industry. A second part will appear in a subsequent issue of the publication. (Not available from U. S. Fish and Wildlife Service.)

MISCELLANEOUS PUBLICATIONS

THE FOLLOWING PUBLICATIONS MAY BE OBTAINED, IN MOST INSTANCES, FROM THE AGENCIES ISSUING THEM.

The Abalones of California, by Paul Bonnot, article, California Fish and Game, Vol. 34, No. 4, October 1948, p. 141-169, illus. with photos. Department of Natural Resources, San Francisco, Calif. Contains life history notes, discusses the commercial fishery and commercial fishing methods, uses and commercial processing of meat and shells, and the sport fishery.

Advance Report on the Fisheries of Quebec, 1947, 20 p. (mostly statistical tables), processed, 10 cents. Fisheries and Animal Products Statistics, Dominion Bureau of Statistics, Canadian Department of Trade and Commerce, Ottawa, Canada, 1948. This booklet gives the quantity and value of fish caught and marketed in 1947 and 1946 from Quebec's sea and inland fisheries, capital equipment of the fisheries, and employees in the fisheries.

The American Nautical Almanac, 1949, 318 p. with tables, printed, $1.50. The Nautical Almanac Office, United States Naval Observatory under the authority of the Secretary of the Navy, Washington, D. C., 1948. This book provides the navigator with a compact publication containing all of the ephemeris (astronomical) material essential to the solution of problems of navigational position. The material is similar to that contained in the 1948 issue of this same volume. It also contains an explanation of the arrangement and use of the volume. Only available by purchase from the Superintendent of Documents, Washington 25, D. C.

Annual Report 1947, International Pacific Salmon Fisheries Commission, New Westminster, B. C., Canada, 1948, 32 p. with photos and graphs, printed. A report of the Commission's second year of regulating the sockeye salmon fisheries within the waters outlined by the Convention. Quotes the U. S. Enabling Act (Public Law 255--80th Congress, Chapt. 345--1st Section) which gives the force of law to the Commission's regulations in Treaty waters within the U. S. boundaries, gives the regulations promulgated by the Commission, lists the total landings, escapement, and engineering operations by area, and reports on actions taken by the Commission in various areas on the West Coast of Canada and the United States.

Fish Consumption in Canada (A Statistical Report for 1945, 1946, and 1947), by Jean B. Tousignant, 46 p., mimeographed, limited distribution.
Economics Division, Department of Fisheries, Ottawa, Canada, May 1948. Gives Canadian domestic consumption of fish by species and by products. Separate figures are shown for cod, haddock, salmon, halibut, herring (including sardines), pilchards, mackerel, lobster, lake trout, sauger, tullibee, whitefish, other sea fish, other fresh-water fish, and other shellfish. The main groups of products are divided into fresh and frozen round (or dressed), fresh and frozen filleted, fresh and frozen shellfish, smoked fish (divided into "split" and "fillets" for cod and haddock), wet-salted and dried fish ("split" and "fillets"), pickled fish, and canned fish and shellfish. The calculation of the domestic consumption of fish has been worked out in terms of product weight (pounds) which is the form in which the fish is marketed. The quantities on fish consumption appear in product weight and also in edible weight.

Foreign Market Notes--Fish and Fish Products (Arthur M. Sandberg Reports on the Situation in the Netherlands, Belgium, and Switzerland), Foreign Agriculture Circular, FFP-2-48, November 24, 1948, 4 p., mimeographed. Office of Foreign Agricultural Relations, U. S. Department of Agriculture, Washington, D. C., free. A second preliminary report of a study of market outlets in the Netherlands, Belgium, and Switzerland for and competition with United States fish and fish products, conducted under the provisions of the Research and Marketing Act. The first report, FFP-1-48, covered France, the United Kingdom, and Ireland.

Light List Mississippi and Ohio Rivers and Their Tributaries, CG-161, 370 p., printed. United States Coast Guard, Treasury Department, Washington, D. C., 1948. This list, published annually and corrected to January 1, 1948, describes aids to navigation maintained by or under authority of the United States Coast Guard, in waters of the navigable inland rivers, which include the Mississippi, Illinois, Des Plaines, St. Croix, Missouri, Red, Minnesota, Ohio, Tennessee, Cumberland, Kanawha, Monongahela, and Allegheny Rivers.

National Progress in Food and Agriculture Programs, 1948, 147 p., processed. Food and Agriculture Organization of the United Nations, Washington, D. C., September 1948, $1.00 a copy. Includes an analysis of 1948 progress and program reports on the fisheries of 46 countries and territories together with reports on agriculture and forestry. Data on fisheries covers the expansion and improvement of production, improvements in handling and marketing the catch, education and research, maximum utilization of supplies, and prospects and problems.

Program of Work for 1949, 4th Session FAO Conference, C 48/2, 48 p., processed. Food and Agriculture Organization of the United Nations, Washington, D. C., November 15, 1948. Presents the program of work for 1949 which was considered at the 4th Session of the FAO Conference held in Washington on November 15. Includes the program of the Fisheries Division of FAO.

A Survey of the Capacity of Cold Storage Warehouses in the United States as of October 1947, by A. S. Walker and M. R. Banks, 33 p. with tables and graphs, processed. Marketing Facilities Branch, Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C., free, September 1948. This survey is the fourteenth of a series of biennial space surveys issued since 1921 and covers 1,781 plants. The booklet contains a map of the United States showing the distribution of net cold storage space suitable for storing fish, by States. In addition, it contains a table giving the total number of firms, the amount of freezer and cold storage space (29° F. and below), and the amount of cooler space (above 29° through 50° F.) in warehouses handling fish by State or region.

"Surveys of World Fisheries," article, Fisheries Bulletin, October 1948, Vol. 1, No. 3, p. 72-75. Food and Agriculture Organization of the United Nations, Washington, D.C. (Bulletin, 25 cents per copy). Covers the fisheries of Egypt and the Anglo-Egyptian Sudan.

Third Annual Report 1946, Maryland Board of Natural Resources, Annapolis, Md., 140 p., illus., tables, graphs. Contains Reports of the Department of Tidewater Fisheries giving oyster production 1945-46 season, crab and fish production 1945; Department of Game and Inland Fish; Department of Research and Education giving data on oysters, crabs and fish investigations and aid given by the Fish and Wildlife Service. Also contains two articles: "Effect of Susquehanna River Stream Flow of Chesapeake Bay Salinities and History of Past Oyster Mortalities on Upper Bay Bars," by C. Francis Beaven, Maryland Department of Research and Education, and "Commercial Aspects of the Upper Chesapeake Bay Oyster Bars in the Light of Recent Oyster Mortalities," by James B. Engle, Fish and Wildlife Service.

Work of FAO 1947/48, C 48/10, 90 p. printed. Food and Agriculture Organization of the United Nations, Washington, D. C., September 1948, price $1.00. Report of the Director-General to the Fourth Session of the Conference of the Food and Agriculture Organization of the United Nations. Summarizes the work of FAO since the Third Conference held in Geneva from August 25 to September 11, 1947. The work conducted by the Fisheries Division in 1947-48 is described. (See Commercial Fisheries Review, November 1948, page 41 for review).

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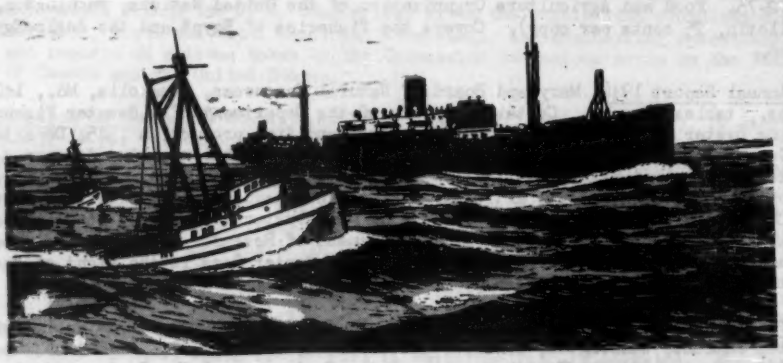
Illustrator -- Gustaf T. Sundstrom

S. S. PACIFIC EXPLORER

Part III - Below Deck Arrangements and Refrigeration Equipment

Fishery Leaflet 316, "S. S. Pacific Explorer, Part III - Below Deck Arrangements and Refrigeration Equipment," recently issued by the Service, is the third of a series of reports on the Pacific Explorer and covers the structure of the ship and the operational features of the refrigeration system. An American factory ship, the Pacific Explorer, became a reality in 1945, when the War Food Administration recommended that the Defense Plants Corporation (a subsidiary of the Reconstruction Finance Corporation) should acquire and convert an ocean-going vessel to a factory ship to further the war effort by increasing the supplies of protein food.



This 39-page illustrated report gives detailed data obtained from the operation of the vessel which will be valuable to the tuna industry and others in the domestic fisheries who may plan to freeze fish at sea or in distant areas. It includes recommendations for the refrigeration plant and recommendations for design of tuna receiving vessels.

The factors considered in the conversion of the ship and a general description of the arrangement of the vessel were published in the January 1947 issue of Commercial Fisheries Review and as Separate No. 161. Part II on suggestions for operators of tuna receiving ships was issued as Fishery Leaflet 301. All of these publications can be obtained free upon request from the U. S. Fish and Wildlife Service, Washington 25, D. C.

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